## AJAY RAJENDRA KUMAR

Boston, MA | Availability: (September to December) 2025 (OR) (January to April) 2026

📕 +1 (857) 919-5124 🔽 ajayrajendrakumar8@gmail.com 🔗 ajaystar8.github.io 🛅 ajayr-kumar Ç ajaystar8

Northeastern University, Boston, MA Sep 2024- Present Knoary College of Computer Science GP2: 40.740 Related courses: Programming Design Paradigms, Computer Vision, Deep Learning, Algorithms Manipal Institute of Technology, Manipal, India Aug 2020- Jul 2024 Bachelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence) GP3: 40.740 Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis EXPERIENCE Northeastern University, Boston, MA Northeastern University, Boston, MA Research Assistant at Oxanore Up- DUCV Backahon I National Runner Up - AAIM Hackathon Research Assistant at Oxanore Up- NUCV Backathon I National Runner Up - AAIM Hackathon Research Assistant at Oxanore Up- NUCV Backathon I National Runner Up - AAIM Hackathon Research Assistant at Oxanore Up- NUCV Backathon I National Runner Up - AAIM Hackathon Research Assistant at Oxanore Up- NUCV Backathon I National Runner Up - AAIM Hackathon Research Assistant at Oxanore McKim School of Busines Northeastern University, Boston, MA Research Assistant at Oxanore-McKim School of Busines Rese	EDUCATION	
Knorry College of Computer Sciences         Expected graduation: May 2026           Master of Science in Computer Science         GPA: 4.074.0           Related courses: Programming Design Paradigms, Computer Vision, Deep Learning, Algorithms         Maigal Institute of Technology, Manipal, India         Aug 2020 - Jul 2024           Rachelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence)         GPA: 9.3710.0         Into 95% of the department, recipient of Scholar's Scholarship           Achievements: National 2 <sup>ed</sup> Rumer Up - DICV Hackahon National Rumner Up - AATM Hackahon         Related courses: Programming Design Paradopsis           Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis         EXPERIENCE           Northeastern University, Boston, MA         Apr 2025 - Present           Research Assistant and Yand Intelligence 1ah         Advisors - Prof, Hadrin Hang, Chowdhury           Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stere image         Northeastern University, Boston, MA           Research Assistant and Dumore-McKim School of Business         Advisors - Prof, Hadrin Intelligence 1ah           Stere second Assistant and Phanore-McKim School of Busines         Advisors - Prof, Stahanoy Mandruk           I Developing a web scraping pipeline to efficienty collect and preproteer Sfn anacial and CSR data of listed Indian Marano         Intelligence 1ah           I Developing a web scraping Publicho t	Northeastern University, Boston, MA	Sep 2024 - Present
Master of Science in Computer Science         GPA: 4.0/4.0           Related courses: Programming Design Paradigms, Computer Vision, Deep Learning, Algorithms         Aug 2020 - Jul 2024           Bachelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence)         GPA: 9.3/10.0           In top 5% of the department, recipient of Scholarship         GPA: 9.3/10.0           Achievements: National 2 <sup>nd</sup> Rumer Up - DICV Hackathon I National Rumer Up - AATM Hackathon         Related courses: Data Structures and Algorithms, Operating Systems, Software Pesting and Analysis           EXPERIENCE         EXPERIENCE         Advisor - Prof, Hudizu Jiang & Dr. Armin RoyChowdhury           Conducting research in collaboration with MathWorks to develop adynamics-ware visual SLAM pipeline using steres image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments.         Feb 2025 - Present           Northeastern University, Boston, MA         Feb 2025 - Present         Research Assistant at Manore-McKim School of Business         Advisors - Prof, Hudizu Jiang & Che Armi RoyChowdhury           • Conducting preserve in collaboration with MathWorks to develop adynamic-server visual SLAM pipeline using street image         Feb 2025 - Present           Research Assistant at School of Busines         Advisors - Prof, Hudizu Jiang & Che Armi RoyChowdhury           • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening Platopeo operational inprovements for more effective future C	Khoury College of Computer Sciences	Expected graduation: May 2026
Related courses: Programming Design Paradigms, Computer Vision, Deep Learning, Algorithms       Aug 2020 - Jul 2024         Manipal Institute of Technology, Manipal, India       Aug 2020 - Jul 2024         Backelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence)       GPA: 9.3 / 10.0         In top 5% of the department, recipient of Scholar's Scholarship       GPA: 9.3 / 10.0         Achievements: National 2 <sup>nd</sup> Runner Up - DICV Hackathon National Runner Up - AATM Hackathon       Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis         EXPERIENCE       Northeastern University, Boston, MA       Apr 2025 - Present         Research Assistant at O'Saal Intelligence Lab       Advisors - Prof. Huaizu Hang & Dr. Arnui RoyChowdhury         Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency: robustness, and motion modeling for dynamic environments.         Northeastern University, Boston, MA       Feb 2025 - Present         Research Assistant at D'Amore-McKim School of Busines:       Advisors - Prof. Anna Lamin & Prof. Valentina Marano stock screening platiforms, financial analysis sites, and government websites.       Jan 2024 - Jul 2024         Indian Institute of Technology, Kharaggmy, India       Jan 2024 - Jul 2024         DI. Research Assistant at School of Matical Science and Technology Lab (SMST)       Advisors - Prof. Subhamoy Mandal         • Created three comprehensiv	Master of Science in Computer Science	GPA: 4.0 / 4.0
Manipal Institute of Technology, Manipal, India Aug 2020 - Jul 2024 Bachelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence) GPA: 9.3 / 10.0 It top 5% of the department, recipient of Scholar's Scholarship Achievements: National 2 <sup>nd</sup> Runner Up - DICV Hackathon I National Runner Up - AATM Hackathon Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis EXPERIENCE Northeastern University, Boston, MA Apr 2025 - Present Research Assistant at Visual Intelligence Lab Advisor - Prof. Huaizu Hang & Dr. Anni RoyChowdhury Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using steree image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments. Northeastern University, Boston, MA Feb 2025 - Present Research Assistant at D'Anore-McKim School of Business Advisors - Prof. Anna Lamin & Prof. Valentina Marano o Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites. Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insglits on company strategies an their social impact, and explore operational inprovements for more effective future CSR activities. Indian Institute of Technology, Kharagpur, India Jan 2024 - Jul 2024 DJL Research Assistant at a School of Medical Science and Technology Lab (SMST) Advisor - Prof. Subharay Mandal Created three comprehensive datasets for biomedical somantic segmentation of Humerus bones from X-ray images. Tainied and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.9.7. Conducted nois tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.9.2 when trained using noisy X-ray images	Related courses: Programming Design Paradigms, Computer Vision, Deep Learning, Algorithms	
Bachelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence)       GPA: 9.3/10.0         In top 5% of the department, recipient of Scholar's Scholarshig       Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis         EXPERIENCE       Northeastern University, Boston, MA       Apr 2025 - Present         Research Assistant at Visual Intelligence Lab       Advisor - Prof. Huazu Jiang & Dr. Aruni RoyChowdhury         • Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments.         Northeastern University, Boston, MA       Feb 2025 - Present         Research Assistant at D'Amore-McKin School of Business       Advisors - Prof. Anna Lamin & Prof. Valentina Marono stock screening platforms, financial analysis sites, and government websites.       Teb 2025 - Present         • Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamay Mandal         Created the onise theore comprehensive datasts for biomedical semantic segmentation of Humerus hones from X-ray images.       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor -	Manipal Institute of Technology, Manipal, India	Aug 2020 - Jul 2024
In top 5% of the department, recipient of Scholar's Scholarship Achievements: National 2 <sup>nd</sup> Rumer Up - DICV Hackathon I National Rumer Up - AATM Hackathon Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis EXPERIENCE Northeastern University, Boston, MA Research Assistant at Viaul Intelligence Lab Advisor - Prof. Huaizu Jiang & Dr. Aruni RoyChowdhary - Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs, Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments. Northeastern University, Boston, MA Research Assistant at D'Amore-McKim School of Business Advisors - Prof. Huaizu Jiang & Dr. Aruni RoyChowdhary - Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities. Indian Institute of Technology, Kharagpur, India D. Research Assistant at School of Medica Science and Technology Lab (SMST) Advisor - Prof. Subhamoy Mandal - Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.92. Aug 2023 Software Development Intern - Research Assistant School of Medica Vestone Prof. Subhamoy Mandal - Created three comprehensive datasets for biomedial semantic segmentation and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images Trained and fine-tuneed model with yeebu due ta retrieval efficiency by reducing delays from two hours to jast a few seconds through	Bachelor of Technology in Computer Science and Engineering (Minor: Computational Intelligence)	GPA: 9.3 / 10.0
Achievements: National 2 <sup>nd</sup> Rumer Up - DICV Hackathon National Rumer Up - AATM Hackathon         Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis         EXPERIENCE         Northeastern University, Boston, MA       Apr 2025 - Present         Research Assistant at Visual Intelligence Lab       Advisor - Prof. Huizin Jiang & Dr. Aruni RoyChowdhury         • Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments.         Northeastern University, Boston, MA       Feb 2025 - Present         Research Assistant at D'Amore-McKin School of Business       Advisors - Prof. Anna Lamin & Prof. Valentina Marano         • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.       Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.         Indian Institute of Technology, Kharagapur, India       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamoy Mandal         • Created three comprehensive datasets for hom the ground up, resulting in a Dice score of 0.97.       Conducted noise tolerance testing of the implemented models and integrated ata	In top 5% of the department, recipient of Scholar's Scholarship	
Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis EXPERIENCE Northeastern University, Boston, MA Apr 2025 - Present Research Assistant at Visual Intelligence Lab Advisor - Prof. Huaizu Jiang & Dr. Aruni RoyChowdhury • Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments. Northeastern University, Boston, MA Feb 2025 - Present Research Assistant at D'Amore-McKim School of Busines Advisors - Prof. Anna Lomin & Prof. Valentina Marano • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites. I Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities. Indian Off Medical Science and Technology Lab (SMST) Advisor - Prof. Subhamay Mandal • Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images. • Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97. • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images. • Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB. • Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB. • Revamped and streamlined change ticket management by rebuilding the frontend interface using Angul	Achievements: National 2 <sup>nd</sup> Runner Up - DICV Hackathon   National Runner Up - AATM Hackathon	
EXPERIENCE       Apr 2025 - Present         Research Assistant at Visual Intelligence Lab       Advisor - Prof. Huaizu Jiang & Dr. Aruni RoyChowdhury         Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments.       Feb 2025 - Present         Northeastern University, Boston, MA       Feb 2025 - Present         Research Assistant at D'Amore-McKim School of Business       Advisors - Prof. Anna Lamin & Prof. Valentina Marano         • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.       Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamoy Mandal         Created three comprehensive datasets for biomedical sementatio and Humerus bones from X-ray images.       Trained and fine-tuned model with a U-Net backhone from the ground up, resulting in a Dice score of 0.97.         Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.       Fidelity Investments, Bengaluru, India       Jun	Related courses: Data Structures and Algorithms, Operating Systems, Software Testing and Analysis	
Northeastern University, Boston, MA       Apr 2025 - Present         Research Assistant at Visual Intelligence Lab       Advisor - Prof. Huaizu Jiang & Dr. Araui RoyChowdhury         Conducting research in collaboration with MathWorks to develop adynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments.       Feb 2025 - Present         Research Assistant at D'Amore-McKim School of Business       Advisors - Prof. Anna Lamin & Prof. Vielnina Maranov         • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.       I. Leveraging Large Language Models (LLMS) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamoy Mandal       • Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.       • Trained and fine-tuned model win a U-Net achieved a Dice score of 0.97.       • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.97.       • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to just a few seconds through the new standardized workflow.         Mariya I Justitute of	EXPERIENCE	
Research Assistant at Visual Intelligence Lab       Advisor - Prof. Huaizu Jiang & Dr. Arani RoyChowdhury         • Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLAM pipeline using stereo image inputs. Focus on enhancing efficiency, robustness, and motion modeling for dynamic environments.       Feb 2025 - Present         Research Assistant at D'Amore-McKim School of Business       Advisors - Prof. Anna Lamin & Prof. Valentina Marano         0       Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.       Isa 2024 - Jul 2024         1       Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.       Isa 2024 - Jul 2024         102. Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamoy Mandal         • Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.       Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.         • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.         Fidelity Investments, Bengaluru, India       Jun 2023 - Sep 2023         Software	Northeastern University, Boston, MA	Apr 2025 - Present
Tortheastern University, Boston, NA       Feb 2025 - Present         Research Assistant at D'Amore-McKim School of Business       Advisors - Prof, Anna Lamin & Prof, Valentina Marano         • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.       Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.         Indian Institute of Technology, Kharagpur, India       Ian 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof, Subhamoy Mandal         • Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.       Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.         • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.         Fidelity Investments, Bengaluru, India       Jun 2023 - Aug 2023         Software Development Intern       Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.         • Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two h	<ul> <li>Research Assistant at Visual Intelligence Lab</li> <li>Conducting research in collaboration with MathWorks to develop a dynamics-aware visual SLA inputs. Eccus on aphencing afficiency, robustness, and motion modeling for dynamic environment.</li> </ul>	<i>liang &amp; Dr. Aruni RoyChowdhury</i> M pipeline using stereo image
Research Assistant at D'Amore-McKin School of Business       Advisors - Prof. Anna Lamin & Prof. Valentina Marano         • Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.       • Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.         Indian Institute of Technology, Kharagpur, India       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamoy Mandal         • Created three comprehensive datasets for biomedical semantic segmentation of Humers bones from X-ray images.       • Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.         • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.         Fidelity Investments, Bengaluru, India       Jun 2023 - Aug 2023         Software Development Intern       • Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.       • Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.         Manipal Institute	Northeastern University, Boston, MA	Feb 2025 - Present
<ul> <li>Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of listed Indian companies from stock screening platforms, financial analysis sites, and government websites.</li> <li>Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities.</li> <li>Indian Institute of Technology, Kharagpur, India</li> <li>Laveract hars social impact, and explore operational improvements for more effective future CSR activities.</li> <li>Indian Institute of Technology, Kharagpur, India</li> <li>Laveact Assistant at School of Medical Science and Technology Lab (SMST)</li> <li>Advisor - Prof. Subhamoy Mandal</li> <li>Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.</li> <li>Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.</li> <li>Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.</li> <li>Fidelity Investments, Bengaluru, India</li> <li>Jun 2023 - Aug 2023</li> <li>Software Development Intern</li> <li>Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.</li> <li>Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.</li> <li>Manipal Institute of Technology, Manipal, India</li> <li>Feb 2023 - Sep 2023</li> <li>NLP Research Assistant</li> <li>SELECTED PROJECTS</li> <li>Improving Text-Driven Human Motion Generation through Equiva</li></ul>	Research Assistant at <b>D'Amore-McKim School of Business</b> Advisors - Prof. Anna	Lamin & Prof. Valentina Marano
<ul> <li>Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insights on company strategies and their social impact, and explore operational improvements for more effective future CSR activities. In 2024 - Jul 2024</li> <li>DL Research Assistant at School of Medical Science and Technology Lab (SMST)</li> <li>Advisor - Prof. Subhamoy Mandal</li> <li>Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.</li> <li>Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.</li> <li>Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.</li> <li>Fidelity Investments, Bengaluru, India</li> <li>Jun 2023 - Aug 2023</li> <li>Software Development Intern</li> <li>Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.</li> <li>Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.</li> <li>Manipal Institute of Technology, Manipal, India</li> <li>Feb 2023 - Sep 2023</li> <li><i>NLP Research Assistant</i></li> <li>Advisor - Prof. Nisha P. Shetry</li> <li>Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GiHdub</li> <li>SELECTED PROJECTS</li> <li>Improving Text-Driven Human Motion Generation through Equivariant equivariant neural networks to Mar 2025 exploit symmetry in human motion.</li> <li>Ac</li></ul>	• Developing a web scraping pipeline to efficiently collect and preprocess financial and CSR data of stock screening platforms, financial analysis sites, and government websites.	of listed Indian companies from
their social impact, and explore operational improvements for more effective future CSR activities. Indian Institute of Technology, Kharagpur, India DL Research Assistant at School of Medical Science and Technology Lab (SMST) Advisor - Prof. Subhamoy Mandal Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images. Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97. Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images. Fidelity Investments, Bengaluru, India Jun 2023 - Aug 2023 Software Development Intern Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB. Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow. Manipal Institute of Technology, Manipal, India NLP Research Assistant Advisor - Prof. Nisha P. Shetty Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub SELECTED PROJECTS Improving Text-Driven Human Motion Generation through Equivariant neural networks to Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course. Rethinking Depth for Object Detection with YOLOV3 Conducted a study analyzing the impact of depth data on object detection performance in the YOLOV3 architecture. Dec 2024 Conduc	• Leveraging Large Language Models (LLMs) to analyze reported CSR activities, extract key insig	ghts on company strategies and
India Institute of Technology, Knaragpur, India       Jan 2024 - Jul 2024         DL Research Assistant at School of Medical Science and Technology Lab (SMST)       Advisor - Prof. Subhamoy Mandal         Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.       Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.         Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.         Fidelity Investments, Bengaluru, India       Jun 2023 - Aug 2023         Software Development Intern       Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.       Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.         Manipal Institute of Technology, Manipal, India       Feb 2023 - Sep 2023         NLP Research Assistant       Advisor - Prof. Nisha P. Shetty         * Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub         SELECTED PROJECTS       Improving Text-Driven Human Motion Generation through Equivariance       Project R	their social impact, and explore operational improvements for more effective future CSR activitie	es.
DL Research Assistant at School of Medical Science and Technology Lab (SMS1)       Advisor - Prof. Subhamoy Mandal         • Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones from X-ray images.       Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score of 0.97.         • Conducted noise tolerance testing of the implemented models and integrated attention and dilated convolutions to improve robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained using noisy X-ray images.         Fidelity Investments, Bengaluru, India       Jun 2023 - Aug 2023         Software Development Intern       Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.       Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.         Manipal Institute of Technology, Manipal, India       Feb 2023 - Sep 2023         NLP Research Assistant       Advisor - Prof. Nisha P. Shetty         • Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub         SELECTED PROJECTS       Improving Text-Driven Human Motion Generation through Equivariant neural networks to exploit symmetry in human motion.       Achieved a 7% increase in matching accuracy and reported competitive F	Indian Institute of Technology, Kharagpur, India	Jan 2024 - Jul 2024
Fidelity Investments, Bengaluru, India       Jun 2023 - Aug 2023         Software Development Interm       • Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.         • Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.         Manipal Institute of Technology, Manipal, India       Feb 2023 - Sep 2023         NLP Research Assistant       Advisor - Prof. Nisha P. Shetty         • Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub         SELECTED PROJECTS       Improving Text-Driven Human Motion Generation through Equivariance       Project Report         • Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to exploit symmetry in human motion.       Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.       GitHub         Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024       Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitati	<ul> <li>Created three comprehensive datasets for biomedical semantic segmentation of Humerus bones f</li> <li>Trained and fine-tuned model with a U-Net backbone from the ground up, resulting in a Dice score</li> <li>Conducted noise tolerance testing of the implemented models and integrated attention and dilated robustness towards noise. Residual Attention U-Net achieved a Dice score of 0.92 when trained to the score of the score o</li></ul>	Trom X-ray images. From X-ray images. Sore of 0.97. d convolutions to improve using noisy X-ray images.
Software Development Intern         • Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.         • Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.         Manipal Institute of Technology, Manipal, India       Feb 2023 - Sep 2023         NLP Research Assistant       Advisor - Prof. Nisha P. Shetty         • Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub         SELECTED PROJECTS       Improving Text-Driven Human Motion Generation through Equivariance       Project Report         • Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to exploit symmetry in human motion.       Mar 2025         • Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.         Rethinking Depth for Object Detection with YOLOv3       GitHub         • Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.       SkILLLS SUMMARY	Fidelity Investments, Bengaluru, India	Jun 2023 - Aug 2023
<ul> <li>Revamped and streamlined change ticket management by rebuilding the frontend interface using Angular and backend architecture using SpringBoot and Oracle DB.</li> <li>Enhanced system performance and significantly sped up data retrieval efficiency by reducing delays from two hours to just a few seconds through the new standardized workflow.</li> <li>Manipal Institute of Technology, Manipal, India Feb 2023 - Sep 2023</li> <li><i>NLP Research Assistant</i></li> <li>Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub</li> <li>SELECTED PROJECTS</li> <li>Improving Text-Driven Human Motion Generation through Equivariance Project Report</li> <li>Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to Mar 2025 exploit symmetry in human motion.</li> <li>Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.</li> <li>Rethinking Depth for Object Detection with YOLOV3</li> <li>Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024</li> <li>Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.</li> </ul>	Software Development Intern	_
seconds through the new standardized workflow.  Manipal Institute of Technology, Manipal, India Feb 2023 - Sep 2023  NLP Research Assistant Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub SELECTED PROJECTS  Improving Text-Driven Human Motion Generation through Equivariance Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.  Rethinking Depth for Object Detection with YOLOV3 CitHub Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024 Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.	<ul> <li>Revamped and streamlined change ticket management by rebuilding the frontend interface using architecture using SpringBoot and Oracle DB.</li> <li>Enhanced system performance and significantly sped up data retrieval efficiency by reducing delayers.</li> </ul>	Angular and backend ays from two hours to just a few
Manipal Institute of Technology, Manipal, India       Feb 2023 - Sep 2023         NLP Research Assistant       Advisor - Prof. Nisha P. Shetty         • Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub         SELECTED PROJECTS       Improving Text-Driven Human Motion Generation through Equivariance       Project Report         • Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to exploit symmetry in human motion.       Mar 2025         • Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.       GitHub         • Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024       Dec 2024         • Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.       SKILLS SUMMARY	seconds through the new standardized workflow.	
NLP Research Assistant       Advisor - Prof. Nisha P. Shetty         • Trained and optimized traditional BERT and XLNet models for misinformation classification. Developed a cosine similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet architecture achieved an F1 score of 0.93, outperforming BERT. Publication   GitHub         SELECTED PROJECTS       Improving Text-Driven Human Motion Generation through Equivariance       Project Report         • Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to exploit symmetry in human motion.       Mar 2025         • Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.       GitHub         • Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024       Dec 2024         • Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.       SKILLS SUMMARY	Manipal Institute of Technology, Manipal, India	Feb 2023 - Sep 2023
Improving Text-Driven Human Motion Generation through Equivariance       Project Report         • Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to exploit symmetry in human motion.       • Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.       GitHub         • Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture.       Dec 2024         • Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.       SKILLS SUMMARY	<ul> <li>NLP Research Assistant</li> <li>Trained and optimized traditional BERT and XLNet models for misinformation classification. Do similarity-based algorithm to flag suspicious users within conversation clusters. The XLNet arch 0.93, outperforming BERT. Publication   GitHub</li> <li>SELECTED PROJECTS</li> </ul>	Advisor - Prof. Nisha P. Shetty eveloped a cosine itecture achieved an F1 score of
<ul> <li>Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant neural networks to exploit symmetry in human motion.</li> <li>Achieved a 7% increase in matching accuracy and reported competitive FID scores against state-of-the-art baselines with minimal hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level Deep Learning course.</li> <li>Rethinking Depth for Object Detection with YOLOv3 GitHub</li> <li>Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024</li> <li>Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.</li> </ul>	Improving Text-Driven Human Motion Generation through Equivariance	Project Report
Rethinking Depth for Object Detection with YOLOv3       GitHub         • Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture.       Dec 2024         • Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.       SKILLS SUMMARY	<ul> <li>Improved on the architecture of the Motion Diffusion Model (MDM) by integrating equivariant r exploit symmetry in human motion.</li> <li>Achieved a 7% increase in matching accuracy and reported competitive FID scores against state- hyperparameter tuning. Awarded "Most Innovative Project" among 40+ projects in a PhD-level I</li> </ul>	neural networks to Mar 2025 of-the-art baselines with minimal
<ul> <li>Conducted a study analyzing the impact of depth data on object detection performance in the YOLOv3 architecture. Dec 2024</li> <li>Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.</li> <li>SKILLS SUMMARY</li> </ul>	<b>Rethinking Denth for Object Detection with VOLOV3</b>	GitHub
<ul> <li>Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YOLOv3 with RGB and depth data (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.</li> <li>SKILLS SUMMARY</li> </ul>	• Conducted a study analyzing the impact of depth data on object detection performance in the YC	DLOv3 architecture. Dec 2024
SKILLS SUMMARY	• Implemented YOLOv3 in PyTorch (37% mAP with RGB data) and a ResNet-based variant of YO (35% mAP), highlighting YOLOv3's limitations in independently processing depth information.	OLOv3 with RGB and depth data
	SKILLS SUMMARY	

Languages & Frameworks: Python, PyTorch, C/C++, Java, Weights & Biases SQL, R Research Interests: 3D Scene Reconstruction, Visual Odometry, SLAM, Human Motion Generation, Image Segmentation Distributed Systems & Infrastructure: SLURM, HPC clusters, Git