

Yashraj Shanker

yshanker@andrew.cmu.edu | (267) 690-2003 | <https://www.linkedin.com/in/yshanker/> | [Yashraj Shanker](#)

AI-driven problem solver with expertise in deep learning, computer vision, and cloud ML solutions. Strong leadership in AI models for medical imaging, autonomous systems, and NLP. Skilled in hybrid CNN-Transformers, AI deployment on AWS/GCP, and real-world automation

EDUCATION

Carnegie Mellon University Master of Science in Mechanical Engineering – Research Relevant Coursework – ML in Healthcare, Applied Machine Learning, Computer Vision	Pittsburgh, PA May 2025 GPA: 4.00/4.00
Drexel University Bachelor of Science in Mechanical Engineering Minor in Finance	Philadelphia, PA June 2023 GPA: 3.79/4.00

SKILLS

Programming: Python, R, SQL, C++, HTML/CSS, JavaScript, Bash, ROS2,
AI/ML: PyTorch, Scikit-Learn, Pandas, TensorFlow, Hugging Face, CNN, Deep Learning, Vision Transformers, NLPs
Cloud Computing: Amazon Web Services (EC2, S3, RDS, Lambda), GCP

PROFESSIONAL EXPERIENCE

ProBound AI AI Researcher Intern	Dover, DE October 2024 – January 2025
<ul style="list-style-type: none">Researched OpenAI, Google Gemini, AWS, and Meta Conversational AI LLMs to inform development strategiesBuilt a Hugging Face sentiment analysis model for foreclosure calls, improving customer insightsDeveloped and deployed conversational AI agents using Bland.ai for business consultant appointment workflowsAnalyzed conversational AI tools (Bland.ai, Vapi.ai) for developer integration and use cases	
Centrillion Technology, Inc. Intern (Machine Learning and Data Science)	Palo Alto, CA June 2023 – August 2023
<ul style="list-style-type: none">Led ML & data science interns, streamlining workflows and CEO communication, improving project deliverablesImplemented clean room procedures using imitation learning and a mobile robot, doubling workflow efficiency in DNA silicon chip productionDeveloped a CNN algorithm to automate threshold prediction for Heatmap masks in mice brain cross-sections, reducing manual dataset labeling	
Catalyx (Formerly Xyntek CXV Global) Junior Systems Engineer	Newtown, PA September 2021 – March 2022
<ul style="list-style-type: none">Achieved 98% success on Factory Acceptance Test for a carton inspection module in cosmetics industryProgrammed PreciseFlex 400 in Visual Basic, boosting pick-and-place efficiency by 20% for client demosPrototyped and developed an automated needle assembly with 10mm precision for pharmaceutical clients	

PROJECTS

Telesurgery – CERLAB at Carnegie Mellon University Masters Research Student (Professor Kenji Shimada)	Pittsburgh, PA September 2023 – Present
<ul style="list-style-type: none">Designed a real-time CV algorithm for guidewire and catheter tracking in surgeriesAligned computer vision techniques for guidewire segmentation, tracking, registration in anatomical modelsDeveloped a backpropagation algorithm for 2D-3D medical image registrationBuilding a hybrid classical-deep learning model for unimodal medical image registration	
Hybrid CNN-Transformer Model for Cancer Detection [PyTorch FastAPI Docker GCP]	Pittsburgh, PA August 2024 – December 2024
<ul style="list-style-type: none">Created a Hybrid CNN-Transformer achieving 91.4% validation accuracy for detecting cancer in WSIsEngineered a hierarchical feature extraction pipeline leveraging U-Net, Vision Transformers (ViTs), and multi-resolution patching for improved tissue structure analysisUsed data augmentation to enhance robustness against staining variability and morphological differencesExplored Swin Transformers, ensembles, and attention-based loss for better feature extraction and generalization	

LEADERSHIP

Graduate TA for 24-262: Mechanics 2: 3D Mechanics	January 2024 – Present
Graduate TA for 24-677: Modern Control Theory	August 2024 – December 2024
Graduate TA for 24-653: Materials and Their Processing for Mechanical Engineers	January 2024 – May 2024
NASA Lunabotics: Founded Drexel's Lunabotics club	September 2022 – May 2023