Roya W. Parsa

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Education

Dartmouth College, Hanover, NH — **Expected Fall 2027**
Master of Science, Computer Science — **GPA 4.0/4.0**
- Honors/Awards: Guarini Graduate Merit Scholarship (75%)
- Relevant Coursework: Machine Learning, Computer Vision, AI Agents, Deep Learning

Adelphi University, Garden City, NY — **May 2025**
Bachelor of Science, Major Computer Science and Minor in Statistics — **GPA 4.0/4.0**
- Honors/Awards: Summa Cum Laude, Honors College, Dean's Circle, Honors College Summer Research Fellowship
- Relevant Coursework: Machine Learning, Artificial Intelligence, Computational Biology, Software Engineering, Databases

Research Experience

Dartmouth College, Hanover, NH — **Nov 2025 – Present**
Graduate Research Assistant (Hassanpour Lab)
- Finetuning Microsoft's Gigapath foundation model on whole-slide histopathology images to build a 4-class classifier distinguishing the overlapping morphology of specific autoimmune and cholestatic liver disease
- Achieved macro-averaged F1 of 0.72 and 73% accuracy on a held out set of 45 slides
- Designed preprocessing pipeline for gigapixel WISI data, including tile extraction, stain normalization, and patch level feature aggregation into slide-level predictions
- Applied dimensionality reduction (UMAP, PCA) to GigaPath tile embeddings to characterize disease subtype separability and surface candidate morphological biomarkers
- Co-leading development of a real-time, AI-guided ultrasound system using YOLOv8 for cervical cancer detection with a focus on edge deployment for resource-limited clinical settings
- Engineering low-latency frontend rendering for clinician-in-the-loop feedback, supporting high-stakes usability evaluation

New York Proton Center, New York, NY — **Mar 2024 – Present**
Student Researcher, Computational Science (PI: Dr. Dong Han)
- Building an all-in-one clinical analysis suite for CT imaging data, integrating advanced calibration curves to generate high-fidelity stopping power maps with sub 1% error rates across patient cohorts
- Developing Python-based benchmarking pipelines to evaluate comparative robustness of DECT and SECT models, isolating performance variables such as image artifacts and low-energy tissue differentiation

Adelphi University / New York Proton Center, New York, NY — **Apr 2024 – May 2025**
Undergraduate Thesis: SPR-NET - A Streamlined DECT Analysis Tool (PI: Dr. Dong Han and Dr. Sixia Chen)
- Developed SPR-NET, a full-stack ML application, to automate the development on trained neural networks on clinical datasets to streamline the workflow for medical image analysis
- Engineered a custom U-Net variant in PyTorch, leveraging supervised learning to reconstruct high-fidelity SPR maps and outperforming traditional analytic methods by 60% in high-density regions
- Awarded the Honors College Summer Research Fellowship ($4000) to investigate deep learning applications in radiological physics

Work Experience

North Atlantic Industries, Bohemia, NY — **Jun 2023 – Dec 2024**
Software Engineer Intern
- Implemented GPT-powered conversational AI into customer documentation platform with semantic search and natural language query processing, reducing support tickets by 50%
- Automated CI/CD pipelines via Jenkins, optimizing build times for cloud migration initiatives

Projects

SimpleCoder *(React, LangChain)*
- Engineered a dynamic web dashboard in React providing a visual interface for an agent, effectively mapping complex RAG and task-planning cycles into a unified workspace
- Implemented real-time state synchronization via WebSockets to stream the agent's chain-of-thought and tool logs

Skills

Languages: Python, R, SQL, Javascript, MATLAB
ML/CV: PyTorch, TensorFlow, YOLO, OpenCV, Scikit-Learn, Keras, GigaPath, LangChain, RAG
Statistics/Data: Dimensionality reduction, cross-validation, supervised/unsupervised learning, NumPy, Pandas, SciPy, Pydicom
Visualization/Web: Matplotlib, Seaborn, React, FastAPI, Flask
Tools: Git, Docker, Linux, AWS, Jenkins