

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, Computational Immunology

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

The Ohio State University, Columbus, OH

Sep 2026 – Present

AI Research Fellow

- Awarded a fully funded, year-long scholarship (selected from XXX+ applicants) to conduct bioinformatics and imageomics research to address real-world environmental challenges during dedicated on-site field research in Hawaii

Dartmouth College, Hanover, NH

Nov 2025 – Present

Graduate Research Assistant (Hassanpour Lab)

- Fine-tuned Microsoft's Gigapath foundation model on whole-slide histopathology images, applying transfer learning and self-supervised tile embeddings to build a 4-class classifier for overlapping autoimmune/cholestatic liver disease morphology with 73% accuracy over held out set (macro-F1: 0.72)
- Engineered an end-to-end preprocessing pipeline for gigapixel WSI data including tile extraction, stain normalization, and patch-level feature aggregation to support scalable slide-level predictions
- Applied dimensionality reduction (UMAP, PCA) to GigaPath tile embeddings as part of a structured experimental analysis to characterize disease subtype separability and surface candidate morphological biomarkers
- Co-leading a real-time, AI-guided ultrasound system using YOLOv8 for cervical cancer detection with a focus on edge deployment for resource-limited clinical settings

New York Proton Center, New York, NY

Mar 2024 – Nov 2025

Student Researcher, Computational Science (PI: Dr. Dong Han)

- Built a clinical CT analysis-suite generating high-fidelity stopping-power maps (sub-1% error across patient cohorts) to support cancer treatment planning
- Developed Python benchmarking pipelines to evaluate the comparative robustness of DECT vs. SECT models, isolating performance variables such as image artifacts and low-energy tissue differentiation; Submission in review

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

- Built a GPT-powered NLP system that parsed unstructured technical documentation into searchable, structured responses using semantic search and natural language query processing, reducing support tickets by 50%
- Engineered a Python ETL pipeline that extracted structured fields from unstructured documentation and loaded them into relational SQL tables weekly, keeping downstream engineers current within one business day
- Containerized VxWorks cross-compilation toolchains in Docker for reproducible embedded builds on Linux, hosting the images on AWS EC2 to provide a scalable cloud-based build environment

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, ETL, NumPy, Pandas, SciPy, Pydicom

Visualization/Web: Matplotlib, Seaborn, React, FastAPI, Flask

Tools: Git, Docker, Linux, AWS, Jenkins