Negin Amou

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Ergopeoxy

Highlights of Qualification

4 years of combined experience in data science, AI research, and software development

Master of Data Science and Artificial Intelligence from University of Waterloo (CGPA 3.9)

Skilled in machine learning, LLM, deep learning (CNNs), computer vision, generative AI, and data-driven research

Researched and implemented semantic, geometric, and clustering segmentation methods for large-scale 3D point cloud processing

AI and development experience with GAN models to generate virtual Hematoxylin and Eosin (H&E) staining for cancer research applications

Programming expertise: Python , C#(.NET, WPF, WinForm), PHP, JavaScript, HTML/CSS

Worked with AlazarTech data acquisition cards and programmed custom acquisition workflows in C++ at the PhotoMedicine Lab

Practical knowledge of REST APIs, DevOps/MLOps practices, and collaborative development

Attention to details during development by taking into account security, compliance and testing requirements

Relevant Work Experience

PhotoMedicine Labs at University of Waterloo

AI and Software Developer *Sep 2025 – Present*

- Reproduced and validated the deep learning frameworks used in the lab's virtual multi-staining pipeline, including CycleGAN, RegGAN, and Pix2Pix, using the dual-excitation PARS microscopy dataset
- Implemented complete training and inference pipelines for virtual staining, performed hyperparameter tuning, and reproduced results from the associated research paper
- Developed a Python Flask–based graphical user interface for the PARS virtual staining library to streamline internal testing and data visualization
- Built a high-performance workstation from scratch to support model training and PARS reconstruction workflows (hardware selection, assembly, OS)
- Set up, integrated, and programmed AlazarTech ATS digitizer cards for synchronized PARS data acquisition using C++ backend logic and ImGui for the front-end visualization layer
- Developed synchronized acquisition routines enabling coordinated triggering between lasers, actuators, and digitizer cards for real-time PARS imaging
- Explored the application of UNIT and MUNIT frameworks for next-generation virtual staining research and cross-domain translation of PARS contrast channels
- Collaborated closely with graduate researchers to validate imaging outputs, investigate model failure modes, and support ongoing algorithmic improvements

Computer Vision for Smart Structure Lab at the University of Waterloo

AI Computer Vision Researcher / Developer *May 2025 – Present*

- Worked under the supervision of Professor Haas and sponsored by Ontario Power Generation (OPG), to automate segmentation and templating of 3D point clouds by training AI models
- Developed Bill Of Material Software (BOM) with Python Flask and Postgres to store and categorize structural components
- Innovated automated and human-guided solutions to accurately estimate the point cloud's area, volume and shape category
- Worked with minimal supervision, researched new concepts and developed new skills as the project progressed
- Researched new methods for categorization and measurements of industrial components (beams, columns, floors, etc)
- Utilized machine learning and data science techniques to clean, categorize and process point cloud data
- Working towards publishing our innovation and automation software

Action Aero

IT Analyst *May 2021 – Aug 2024*

- Worked on programming, documenting, and debugging custom-made software such as Shipment Estimator, CRM, OEM, and other ongoing projects
- Automated and optimized daily processes by scripting in PowerShell and Python
- Created need-based applications using C# (WinForm/WPF), PHP, and database management systems (Oracle & MySQL)
- Conducted data analysis and reporting to identify patterns in production, inventory, and turnaround time using Oracle and MySQL databases, Crystal Reports, Power BI, and Excel
- Contributed to configuration and maintenance of Cisco network switches

Maximus Canada

Angular Developer *Jan 2021 – Apr 2021*

- Used Angular framework and TypeScript to develop web applications
- Developed technical designs according to functional specifications and participated in design reviews
- Performed unit and integration testing to ensure proper and efficient software execution
- Supported systems in test and production environments by debugging issues
- Developed unit and integration tests while contributing to shared GitHub repositories, leveraging CI/CD practices to ensure reliable builds and smooth deployments

Invesco Ltd.

Cybersecurity Analyst *Sep 2020 – Dec 2020*

- Worked with SIEMS tools to protect, detect, prevent, and respond to cyber threats
- Automated threat detection for firewall using MineMeld to aggregate threat information using OSINT
- Collaborated with other security team members for incident response
- Worked on setting up firewall rules during incident response
- Research security breaches , CVEs and read on latest cyber attack news to stay updated and provide a report back to the team
- Worked with IBM QRadar , Virus total and CrowdStrike to identify threats, and take appropriate actions

University of Prince Edward Island

Tech Lead *Jan 2023 – May 2023*

- Led the Virtual Wellness project with a team of six developers
- Used PHP for back-end development and JavaScript/CSS/HTML for front end
- Wrote extensive unit tests and security documentation for the project
- Managed the Git repository to ensure seamless collaboration
- Implemented and maintained CI/CD pipelines with GitHub Actions, contributing to repository management, automated testing, and collaborative development workflows

Education

University of Waterloo

Master of Data Science and Artificial Intelligence *Sep 2024 – Dec 2025*

- Winner of Scotia Bank Entrance Scholarship (CAD 10,000)
- CGPA 3.9/4
- Worked as Teaching Assistant in CS 136L to answer students' questions and help them with course material

University of Prince Edward Island

Bachelor of Science in Computer Science and Mathematics *Sep 2019 – May 2023*

- Winner of "School of Mathematical and Computational Sciences Graduating Student Award" (Highest GPA in the department)
- CGPA: 4.24/4.3
- Academic Excellence Award (2019-2023)
- Dean's Honours List (2019 – 2020 & 2021 – 2022)
- Authored technical papers on cybersecurity topics, including OSINT, network security, web application security, cryptography, and AI in cybersecurity