

Kristiane Rell

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EDUCATION

Clarkson University - Bachelor of Science

Potsdam, NY

Major in Computer Science; Minor in Mathematics

Expected December 2025

Cumulative GPA: 3.99/4.00 - Presidential Scholar; Valedictorian Award (Saugerties High School 2022)

RELEVANT EXPERIENCE

CACI

Summer 2025

Software Engineering Intern

Sterling, VA

- Developed full-stack services in **Java Spring Boot**, **Python**, and **Nuxt.js** in an enterprise **Linux** environment.
- Implemented containerization using **Podman** (Docker CLI), **Kubernetes**, and **Minikube** (for local cluster development).
- Participated in an **Agile** development environment and maintained a **CI/CD pipeline** using **Gitlab**, **Jira**, and **SonarQube**.

IBM

Poughkeepsie, NY

Infrastructure Firmware Developer Intern

Summer 2024

- Tool development in **Python** and **Vue.JS** to automate and simplify Millicode tasks and analysis.
- Implemented data parsing and manipulation techniques and created user-friendly interfaces to enhance data accessibility.
- Enhanced **assembler** language proficiency in a System Z Millicode context.
- Implemented containerization with **Docker** and **Red Hat OpenShift**.

UNDERGRADUATE RESEARCH

Clarkson University, Potsdam, NY

Student Researcher - AI-Based Scheduling Optimization

Fall 2024 - Spring 2025

- Researching AI-driven scheduling and timetabling optimization to find intelligent solutions to academic scheduling problems while exploring and confronting the effects of different constraints.
- Developing and analyzing algorithms to improve scheduling efficiency and adaptability. This includes using **SMT and SAT solvers** combined with local search, genetic search, simulated annealing, CSPs, and other AI techniques.
- Supervised by Professor Christopher Lynch, and collaborating with a fellow student.

HIGHLIGHTED PROJECTS

Dashboard Web Application - CACI

Summer 2025

- Developed a dashboard website with customizable modules (i.e. maps & tables) for users to ingest and analyze data.
- Implemented microservices and websockets using **Java Spring Boot** to ingest live data to the frontend & **MongoDB**.
- Designed and implemented a clean user interface with customizable drag & drop dashboards using **Nuxt.js**.
- Containerized the web application using **Podman**, **Kubernetes**, and **Ingress** in an enterprise **Linux** environment.

Coverage Project - IBM

Summer 2024

- Decoded and parsed binary files to extract code coverage information in **Python**.
- Manipulated and processed extracted information into digestible JSON dictionaries in **Python**.
- Developed a web application to display and allow convenient access to the data using **Vue.js** and **Python**.

University Final Exam Scheduler - Research

Spring 2025

- Developed an AI-based exam scheduler using local search (hill climbing with random restarts). Implemented in C++.
- Ensured no student had overlapping exams while respecting room capacity constraints.
- Achieved efficient and complete scheduling, significantly outperforming brute-force approaches in large search spaces.

Climbing Website - Personal

Summer 2025 - Present

- Developing a website that allows climbers on the East Coast to easily find information on climbing areas and routes.
- Developed backend services with **Flask** and **MongoDB** for data management and frontend templates using **Django**.
- Containerized the application with **Docker/Docker Compose** and automated deployment through a **CI/CD pipeline**.

RELEVANT COURSEWORK

- High Performance Computing • Computer Architecture and Organization • Operating Systems • Artificial Intelligence
- Machine Learning • Database Management • Wireless Networks • Computer Algorithms and Data Structures

TECHNICAL SKILLS

Languages: Python, C++, Java (Spring Boot), C, Assembly (x86, MIPS, z-Arch), JavaScript (Vue.JS/Nuxt.js), SQL, Z3

Specialized Knowledge: OOP/OOD, Parallel Computing (MPI, PETSc/SLEPc), AI/ML Algorithms, Containerization, Low-Level Systems, Python Scientific Stack (NumPy, pandas, Matplotlib), REST APIs, Websockets

System & Tools: Linux, Git, GDB, Kubernetes, Docker/Podman, MySQL, MongoDB