

# Sepehr Akbari

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## EDUCATION

<b>Lake Forest College</b> <i>B.A. Computer Science &amp; Mathematics, Minor in Data Science</i>	Aug 2023 - May 2027 GPA: 4.0
<b>Relevant coursework:</b> algebraic geometry, tensor geometry, AI, ML, computer vision, statistics, linear algebra, algorithms, numerical analysis, probabilities, bayesian methods, etc.	
<b>Honors:</b> Davis Scholar, Presidential Scholarship, Dean's List, Best All-Around Academic Record in Class of '27.	

## WORK EXPERIENCE

<b>Software Engineer (Part-time)</b> <i>Applied Data Center</i>	Jul 2025 – Present <i>Lake Forest, IL</i>
• Engineered and deployed modular full-stack solutions with FastAPI, Flask, Tailwind CSS, and ShadenUI to automate administrative tasks, significantly reducing processing time and enhancing operational efficiency.	
<b>Software Engineer Intern</b> <i>TenacityAI</i>	
• Engineered key user-centered features for a React Native mobile application, suitable for both iOS and Android.	May 2024 – Aug 2024 <i>Chicago, IL (remote)</i>
• Integrated the OpenAI API to power an in-app chatbot, boosting user engagement through interactivity.	
• Strengthened application security by implementing an OTP verification flow and secure data handling modules on a Postgres platform to resolve user on-boarding and data verification issues.	
<b>Software Engineer Intern</b> <i>Elite Engineering Solutions</i>	May 2023 – Aug 2023 <i>Tehran, Iran</i>
• Executed a database migration from MySQL to MongoDB, improving data retrieval efficiency and scalability.	
• Optimized indexing and queries, reducing critical query response times by 15% and enhanced database reliability.	
• Developed and deployed new features, including a Java Swing API endpoint for asynchronous data processing.	
<b>Software Engineer Intern</b> <i>Lavan Energy</i>	Jun 2022 – Aug 2022 <i>Tehran, Iran</i>
• Developed a key internal data-sharing frontend using a React.js and a modular Node.js/Express.js backend.	
• Engineered RESTful APIs to enable data flow across the company, supporting a shift from legacy systems.	
• Containerized the new application using Docker and collaborated on its AWS deployment to ensure high availability and a consistent environment.	

## SELECTED PROJECTS

<b>Quantum DQN Agent</b>   <i>Python, Qiskit, PyTorch</i>	<i>Source Code</i>
Implementation of a reinforcement learning DQN agent trained to synthesize the shortest possible quantum circuits that match a target quantum state or a complex unitary operator with high fidelity.	
<b>Heart Anomaly Framework</b>   <i>Python, PyTorch, TensorFlow, Transformers, CUDA</i>	<i>Source Code</i>
Anomaly detection pipeline from heart beat audio inputs using deep learning as both a classification and regression task.	
<b>Objectness</b>   <i>C++, Go, Python, PyTorch, TensorFlow</i>	<i>Source Code</i>
A module to detect objects and produce meaningful, context-aware crops from images, to enhance classification tasks.	

## TECHNICAL SKILLS

<b>Programming Languages:</b> Python, Macaulay2, Rust, Java, Go-lang, C, C++, R, SQL, Julia, Bash, JavaScript, PHP
<b>AI/ML &amp; Data Science:</b> PyTorch, TensorFlow, Hugging Face, scikit-learn, scikit-image, OpenCV, Matplotlib, Pandas, NumPy, Generative AI, LLMs, Computer Vision, Natural Language Processing
<b>Development:</b> React, React Native, Node.js, Express.js, FastAPI, Angular, Flask, RESTful APIs, Tailwind CSS, Shadcn UI, HTML, CSS, Bootstrap, Java Swing, Cypress
<b>Tools &amp; Platforms:</b> Git, Docker, AWS, Google Cloud, Qiskit, Linux, VIM, CUDA
<b>Core CS:</b> Data Structures & Algorithms, Agile Development, Object-Oriented Programming (OOP), Test-Driven Development (TDD), CI/CD, Model Implementation