Keyan A. Rahimi

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EDUCATION

Brown University   Providence, RI | Graduate May 2026
Sc.B. Computer Science Professional Track - AI/ML & Security, Sc.B. Cognitive Neuroscience
Relevant Coursework: Deep Learning, Machine Learning, Deep Learning Behaviors, Computational Linguistics, Computer Vision, Cyber Security, AI & Security, Computer Systems, Data Structures & Algorithms, Software Engineering, Statistics, Discrete Structures, Linear Algebra, UI/UX

AWARDS

Hack@Brown Winner   Providence, RI | January 2023
- Led a team to create a fully functional Unity game connected to a browser using WebGL. Completed in under 24 hours.

MIT iQuHack Winner   Cambridge, MA | January 2021
- Worked with a team to create quantum software using the Qiskit SDK, running it on an actual quantum computer.

Hack@Harvard 4th Place   Cambridge, MA | October 2023
- Led a team to create a full stack web app that generates daily puzzles for users to track signs of early Alzheimers long term.

BEST Robotics National Champion   Auburn, AL | January 2020
- Served as head developer and team lead of 60+ members, winning a national robotics title competing against 300+ other schools in robot driving, marketing, and technological exhibition.

RELEVANT WORK EXPERIENCE

Carney Institute for Brain Science, *Undergraduate Researcher*   Providence, RI | September 2024 – Present
- Worked within the Center for Computational Brain Science at the Serre Lab, focusing on the future of advanced NeuroAI.
- Started a brand new project within the lab regarding the intersection of artificial and natural intelligence, creating a test benchmark to compare DNNs ability to perceive depth against humans.

AI Predictive Analytics Lab, *Undergraduate Researcher*   Starkville, MS | January 2024 – Present
- Published 4 research papers applying Deep Learning to applicable problems and covering AI architectures in depth.
- Served as a reviewer on 8 submissions for the research journal AI Letters.
- Implemented a variety of CNN models including VGG-19 and ResNet to test defenses against adversarial attacks, improving robustness against standard Fast Gradient Sign Method (FGSM) attacks by 12% over current state-of-the-art models.

Potentia Analytics, *Software Engineer Intern*   Starkville, MS | June 2023 – August 2024
- Applied an AI model over two summers to improve the efficiency of patient flow in hospital emergency rooms by 27%.
- Led a team to develop a full-stack enterprise healthcare app for a dental company, now used by over 350 clinics in Canada.
- Engaged in communication with clients alongside the project manager, tweaking goals and adjusting product strategies.

LEADERSHIP EXPERIENCE

Alpha Delta Phi Literary Society, *Undergraduate Parliament President*   Providence, RI | December 2023 – Present
- Served the interests of the national society alongside the Graduate Board of Governors, corresponding with individual society chapters and a vast alumni network. Managed and allocated the dividends of a $1,000,000+ endowment portfolio.
- Planned and led 12 societal and academic events totaling 200+ attendees, culminating in the initiation of 35 new members.

Brown University Computer Science, *Departmental Undergraduate Group Officer*   Providence, RI | August 2023 – Present
- Mentored CS undergrads, connecting them with faculty and research opportunities through informative and academic events.
- Coordinated with professors to create helpful resources and masterclasses, operating as a branch of the department's program.

FEATURED PROJECTS   Repos, papers, and case studies are on my Personal Website: https://keyan.us/

Neural Network Education | Pytorch, React, Resolve
- Led a team to deploy a React website containing a fully coded neural network image classifier along with an educational video and explanation, to teach beginners and young adults about neural networks and the function of AI.

DriverAI Redesign | Figma, HTML/CSS, Iterative Design
- Facilitated a team effort to redesign the Y Combinator company Driver AI website from the ground up, adapting to feedback to develop sketches, wireframes, design assets, and present a final website mockup to the founders.

Rocket Recall | React, Javascript, SQL
- Full stack programmed web app built to test for signs of early Alzheimer's disease in participants by giving them a set of different coded puzzles each day, keeping track of their progress over time, and sending them detailed cognitive reports.

Way Back Home | Unity, C++, HTML/CSS
- Launched a fully coded Unity game onto a web browser using WebGL, building it from the ground up including game physics, website compatibility, animations, and level design. Selected as Hack@Brown 2023 winner.

Brown Dorm Finder | Java, React, HTML/CSS
- Partnered with University Reslife to create a secure full-stack web app for students to filter through 1,000+ dormitories.

Denoising MRI Images using Deep Neural Networks | Python, Tensorflow, Keras
- Researched common and robust methods to denoise brain images and compared them against using three different deep neural networks, weighing the benefits of using deep CNNs in a published paper.

Image Denoising Using Modified CDF in the Wavelet Domain | Pytorch
- Implemented a modified Cumulative Distribution Function (CDF) combined with a nonlinear function to denoise various types of images such as MRIs with a 9% improvement over conventional methods, while preserving image edges and clarity.

Impact of Adversarial Noise on Deep Learning for Image Classification | Python, Jupyter Notebook
- Wrote a comprehensive review on the impact of adversarial noise, including its origins, common methods of attacks, and current defenses. Tested an alternate approach to a defense which improved the robustness against FGSM attacks by 12%.

PUBLICATIONS

1. Rahimi, Keyan, and Noorbakhsh Amiri Golilarz. "Deep Neural Network-based Methods for Brain Image De-noising: A Short Comparison." International Journal of Advanced Computer Science & Applications 15.2, 2024.
2. Golilarz, Noorbakhsh Amiri, Elias Hossain, Abdoljalil Addeh, and Keyan Rahimi. "Learning Algorithms Made Simple." arXiv preprint arXiv:2410.09186, 2024. (Under submission)
3. Golilarz, Noorbakhsh Amiri, and Keyan Rahimi. "Image Denoising using Modified Cumulative Distribution Function in the Wavelet Domain." IEEE 16th International Conference on Computational Intelligence and Communication Networks (CICN), 2024.
4. Golilarz, Noorbakhsh Amiri, and Keyan Rahimi, "Optimized Adaptive Based Method for MR Image Denoising." IEEE 16th International Conference on Computational Intelligence and Communication Networks (CICN), 2024.

SKILLS & TECHNOLOGIES

Languages: Python, Java, C/C++/C#, Typescript, Javascript, HTML/CSS, SQL, GoLang
Technical Skills: Git, Node.js, React, Angular, Vue, Vite, Django, Docker, MongoDB, JAX, Firebase, Pytorch, Tensorflow, Keras, Linux, OpenGL, Figma, Unity, Adobe Suite, Full Stack Development, Agile Development, Systems Engineering, AI/ML