KEVIN ZHANG

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EDUCATION

Carnegie Mellon University June 2023 - Present
Bachelor of Science, Computer Science *Pittsburgh, PA*

· Coursework: Introduction to Computer Systems, Parallel Data Structures and Algorithms, Principles of Functional Programming, Principles of Imperative Computation, Mathematical Foundations for Computer Science, Matrix Theory, Great Theoretical Ideas in Computer Science, Great Practical Ideas in Computer Science

SKILLS

· C++, Java, Python, Git, JavaScript, Regex, Assembly, JSON, HTML, CSS, MATLAB, LaTeX
· Visual Studio Code, IntelliJ, Github, Linux/Unix, MacOS, Windows
· Software Development Life Cycle (SDLC), Teamwork, Communication, Problem Solving, Functional Programming, Parallel Computing, Data Analysis, Machine Learning, Computer Graphics

EXPERIENCE

CMU Data Interaction Group May 2024 - August 2024
Software Engineering Intern *Pittsburgh, PA*

· Working on the Mosaic project under Professor Dominik Moritz.
· Reduced client-to-server querying latency by around 10% (20ms to 18ms) through batching and parallelization, which translates to an increase of millions of data points processed per second.

Fermilab June 2021 - June 2023
Student Researcher *Batavia, IL*

· Deployed machine learning models that lowered lepton jet misclassification rates by 61.8% from the theoretical limit of cuts-based methods currently used in my group (from 15.6% to 5%).

PROJECTS

· **Radiosity Engine:** A MATLAB rendering engine that works by applying the finite element method to solve the rendering equation for a given scene.
· **Idea Networks:** A hackathon project that takes two ideas (as strings) and generates a network of ideas (also strings) in between them using API calls to a LLM, where an edge between two ideas denotes a similarity rating of $\geq 95\%$.
· **Spacetree:** Another hackathon project which visualizes and simulates the n-body problem in $O(n \log n)$ time using the Barnes-Hut algorithm and APIs to a custom ML model to detect collisions.

SELECTED AWARDS AND HONORS

· 2×US Physics Olympiad (USAPhO) Bronze Medal (2022, 2023)
· 3×American Invitational Mathematics Examination (AIME) Qualification (2021, 2022, 2023)
· Score of 19 on the William Lowell Putnam Mathematical Competition
· Math Chair of Mu Alpha Theta IMSA Chapter (2022 – 2023)
· Vice President of Code Society (2021 – 2023)
· Professional Physics Publication. “Prospects for a Search for Doubly Charged Higgs Bosons at the HL-LHC”. Link.