(650)739-3339
jkunde@wisc.edu
Jackson Kunde

Jackson Kunde

Education

- **University of Wisconsin—Madison** *2021 - 2025*
  Mathematics and Computer Science
- **Academic Awards**
  Dean's List (Fall 2021, Spring 2022, Fall 2022, Spring 2023)
- **Menlo School (High School Diploma)** *2018 - 2021*
  Atherton, California
  – #45 High School for STEM in the USA.

Experience

- **University of Wisconsin-Madison** *September 2023 - Present*
  Machine Learning Researcher (Lee Lab) Madison, Wisconsin
  – Conducting state-of-the-art research into language models under the guidance of Professor Kangwook Lee.
  – Researching, implementing, and training language models.
  – Developing technical skills in Python and PyTorch.

  September 2023 - January 2024
  Machine Learning Researcher
  – Conducting research in the field of generative machine learning for materials informatics under the guidance of Professor Dane Morgan and postdoctoral student Ben Afflerbach.
  – Using high-throughput computing center to train and evaluate deep learning models to generate new material structures with specific target properties.
  – Conducting analysis of generated structures to verify target properties and discover novel structures.
- **Backblaze** *June 2022 - September 2022*
  Software Engineering Intern San Mateo, California
  – Software engineer on Backblaze's B2 cloud storage team.
  – Developed a command line tool to query our distributed database (Apache Cassandra) efficiently.
  – Conducted research on new technologies to improve the performance of the command line tool.
  – Used Ansible Playbook to automatically deploy the script to necessary servers.
  – **Technologies: Java, Python, Git, Ansible Playbook, CQL, Apache Cassandra, Gradle**
- **GameTime** *June 2021 - August 2021*
  Data Science Intern San Francisco, California
  – Created web-based interactive data visualizations for consumers to view ticketing data.
  – Conducted analysis on seat quality scores and ticket pricing to improve view-to-purchase conversion.

Extracurricular Organizations

- **Wisconsin AI Safety Initiative** *September 2023 - Present*
  Operations Director Madison, Wisconsin
  – Deepening understanding of AI safety concepts and techniques through the rigorous study of academic papers and relevant media sources, staying informed about the latest advancements in the field.
  – Engaging in weekly discussions with fellow members, fostering a collaborative learning environment to dissect and critically evaluate topics such as **Instrumental Convergence, Reward Specification, Goal Misgeneralization, Scalable Oversight, Interpretability, Governance, and Adversarial Techniques.**
- **Journal For Undergraduate Science and Technology** *September 2023 - Present*
  Contributing Writer Madison, Wisconsin
  – Actively engaging in research and writing for the Journal for Undergraduate Science and Technology, with a primary focus on authoring an editorial dedicated to the evolution of Computer-assisted proofs.
  – Synthesizing and analyzing current research findings, academic papers, and scholarly literature to provide a well-informed and comprehensive understanding of the topic.
  – Collaborate with experts and professionals in the field by conducting interviews, fostering a deeper understanding of the nuances and intricacies of the topic.

- **Undergraduate Mock Trial Team** *September 2021 - Present*
  Financial Chair Madison, Wisconsin
  - Led the Undergraduate Mock Trial Team to an impressive ascent from 241st place in the nation to an outstanding 11th place in the nation during my first year on the team, showcasing strong dedication, strategic thinking, and effective leadership skills.
  - Recognized as one of the top 16 competitors in the country out of a competitive pool of 7,000 participants.
  - Proficient in synthesizing and analyzing extensive volumes of legal information, demonstrating the ability to distill complex case details and evidence into compelling arguments that captivate audiences and judges.
  - Collaborate effectively with teammates to build strong case strategies and practice intensive trial simulations, fostering a cohesive and supportive team environment that contributes to the team's competitive success.

Relevant Coursework

Theoretical Foundations of Large Scale Machine Learning

- *Graduate level machine learning course examining theoretical ideas and understanding how well they apply in practice. Covering topics such as optimization, generalization, modern architectures, and adversarial attacks.*

Matrix Methods in Machine Learning

- *Linear algebraic foundations of machine learning featuring applications of matrix methods from classification and clustering to denoising and neural networks*

Artificial Intelligence

- *Broad overview of AI focused on knowledge-based search techniques and machine learning methods like neural networks, reinforcement learning, and natural language processing*

Bioinformatics

- *Algorithms for computational problems in molecular biology including sequencing, alignment, modeling sequences, phylogenetic trees, and gene expression analysis*

Linear Algebra II

- *Advanced linear algebra topics like diagonalization, Jordan form, inner product spaces, operators, bilinear forms, matrix norms*

Real Analysis

- *Mathematical analysis of the real number system, sequences, limits, continuity, differentiation, integration, sequences and series of functions*

Stochastic Processes

- *Discrete and continuous-time stochastic processes with applications to queuing, branching, and other models*

Probability with Multivariable Calculus

- *Probability distributions, expectation, variance, multivariate probability, Markov's and Chebyshev's inequalities, laws of large numbers, central limit theorem*

Proof-based Multivariable Calculus

- *Partial derivatives, multiple integrals, line and surface integrals*

Data Structures & Algorithms III

- *Version control, self-balancing trees, unit testing, GUIs, HTML, JavaScript*

Data Science II

- *Pandas, Matplotlib, search algorithms, web scraping, OOP, machine learning*

Discrete Math

- *Logic, sets, relations, mathematical induction, invariants, algorithm analysis, recurrences, asymptotic growth*

Languages & Libraries

- *Python, Java, C, PyTorch, NumPy, Pandas, Matplotlib*