SIDHANTH KARPE

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EDUCATION

The Pennsylvania State University   University Park, PA
Bachelor of Science in Computer Science   *August 2022 – May 2026*
- **Relevant Coursework:** Data Structures, Calculus I & II, Elementary Probability, Linear Algebra, Elementary Mathematical Statistics, Object-Oriented Programming, Database Design and Management, Public Speaking

TECHNICAL SKILLS

Languages: Python, JavaScript, HTML, CSS, Java, React, Flask, PyTorch, PostgreSQL
Technologies: GitHub, Visual Studio Code, PyCharm, NetBeans, IntelliJ, Amazon Web Services, Azure
Interests: Machine Learning, Deep Learning, Natural Language Processing, Large Language Models, Computer Vision, System Development and Software Design, Artificial Intelligence, Data Analytics, piano, rock climbing

EXPERIENCE

The Pennsylvania State University | Eberly College of Science   University Park, PA
Generative AI Research Assistant   *August 2024 – Current*
- Developing a linear-regression model to determine transverse momentum distribution of protons
- Mapping 2D hadronic structures to a 3D polynomial using Matplotlib and SciKit-Learn for partonic visualization.
- Engineering a Generative Adversarial Network on a small-scale dataset to investigate and analyze shifts in quark structures

ArtemisCare   Princeton, NJ
Machine Learning Intern   *May 2024 – August 2024*
- Created and trained an advanced NLP model aimed at helping senior citizens improve both physical and mental health.
- Collected and curated text data from five major social media platforms and healthcare websites to train the NLP model
- Designed an insight engine incorporating thousands of data trials, including information and variables like heart rate, blood pressure, preexisting conditions, height, weight, age, and genetic factors
- Leveraged Voiceflow to seamlessly integrate ChatGPT API with Google Sheets and Airtable for enhanced functionality.

Nittany AI   University Park, PA
Club Member   *Sept 2023 – Dec 2023*
- Gained extensive hands-on experience in cleansing and preprocessing hundreds of thousands of rows of numerical data
- Created and fine-tuned machine learning models for credit card fraud detection utilizing SciKit-Learn and NumPy libraries
- Designed, developed, and optimized classification models to address complex challenges, including spam detection
- Employed Pandas for efficient and comprehensive data manipulation, ensuring high-quality input data for machine learning models.

Downingtown Area Recreation Consortium   Downingtown, PA
Camp Counselor   *June 2023 – Aug 2023*
- Designed, developed, and led engaging and educational activities for groups of 15 to 20 children in a camp setting.
- Implemented structured daily schedules that included arts and crafts, sports, and team-building exercises for children.
- Provided mentorship and support to fellow camp counselors, sharing best practices, strategies, and effective approaches
- Collaborated closely with counselors and camp staff to plan, organize, and execute special events and excursions.

PROJECTS

Course Schedule Builder | *JavaSwing, JavaSQL*   May 2024
- Developed a comprehensive Schedule Builder for students to register and drop classes, and for teachers to effectively manage their class schedules.
- Utilized JavaSwing for creating the GUI and JavaSQL to develop robust functionality in the Schedule Builder application

Salary Analysis | *Matplotlib, NumPy, Pandas*   Dec 2023
- Conducted a detailed analysis of maximizing salary potential in the Data Science field, considering position, location, and working hours.
- Implemented advanced technologies like Matplotlib, NumPy, and Pandas to efficiently manage, process, and analyze complex datasets.