Roshan Kenia

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Education

Stony Brook University - Stony Brook, New York **Expected Graduation: May 2023**
Bachelor of Science in Computer Science, Applied Math and Statistics GPA: 4.0/4.0

Awards

NSF UG Fellowship ($8k), URECA Grant ($5k), University Scholars Honors, Dean's List, SBU Presidential Scholarship

Experience

Stony Brook University, Stony Brook, NY — *Machine Learning Researcher* (NSF Funded) **January 2022 - Present**

- Studying with Dr. Zhaozheng Yin the problem of learning under the presence of noisy labels within an image dataset.
- Mitigating ways in which a robust model can be built so as to be tolerable to overfitting caused by noisy data.
- Utilizing semi-supervised learning by treating noisy samples as unlabeled in order to compete with state-of-the-art.

College of Engineering and Applied Sciences, Stony Brook, NY — *Computer Science Tutor* **August 2020 - May 2022**

- Began as a math tutor covering classes such as Linear Algebra, Graph Theory, and Calculus I-IV and was eventually promoted to the college's only computer science tutor.
- Tutored 6 hours a week in 11 high-level computer science courses including Data Structures, Algorithms, Systems Fundamentals (Assembly Language), and Software Engineering.

SupplyHouse.com, Melville, NY — *Software Engineering Intern* **June 2021 - July 2021**

- Applied Scrum methodologies whilst working on projects for the e-commerce company's backend admin system used by other departments such as Forecasting, Customer Service, and Buying.
- Developed new querying methods in Java with the use of MySQL that decreased total query time by 83%.

Koo Laboratory, Cold Spring Harbor, NY — *Machine Learning Researcher* (Volunteer) **September 2020 - May 2021**

- Researched the functional impact of genomic mutations through a computational lens using machine learning solutions.
- Conducted a two semester long project with Dr. Peter Koo involved with distilling knowledge from a teacher network to a student network as a regularization technique in order to build a more general and less overfitted model.
- Compared model interpretability using methods such as saliency maps, integrated gradients, and in-silico mutagenesis.

Relevant Courses

Machine Learning, Natural Language Processing, Data Science, Data Mining, Analysis of Algorithms, Data Structures and Algorithms, Object-Oriented Programming (Java), Linear Algebra, Graph Theory, Software Engineering, Computer Networks

Technical Skills

- Languages: Java, Python, JavaScript, C, HTML, CSS, MySQL
- Software Engineering Technologies: MongoDB, Express, React, Node.js (MERN)
- Machine Learning Technologies: Tensorflow/Keras, Pytorch, Numpy, Pandas, Matplotlib, Seaborn, Sklearn

Projects

URECA Summer 2022: Learning with Noisy Labels / Pytorch, Sklearn, Seaborn **June 2022 - August 2022**

- Investigated ways uncertainty metrics may be used to separate noisy samples from clean ones in a corrupted dataset.
- Found metrics such as entropy and peak ratio could be employed while training to identify noise with an 80% accuracy.
- Recognized using dimensionality reduction algorithms such as tSNE and PCA greatly assisted in better visualizations of noisy sample vectors for images from CIFAR10 in a 2D or 3D space.

JART: Joining Artists in Real Time / MongoDB, Express, React, Node.js **January 2022 - May 2022**

- Designed a real time comic and story building game site in which users could play together using socket.io, make and interact with posts, chat with other users, and discover new communities for topics they were interested in.
- Created and queried a MongoDB server that stored users posts, friends, likes, dislikes, comments, and communities.