Kiran Bhat

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Education

Stanford University Stanford, CA

B.S. in Computer Science, Minor in Physics *Expected June 2024*

- GPA: 3.80
- Relevant Coursework: Algorithms | Data Structures | Machine Learning | Natural Language Processing | Operating Systems | Graphics & Imaging | Probability | Discrete Mathematics | Linear Algebra & Multivariable Calculus

Technical Experience

Stanford University School of Engineering Mar 2022 - Present

Computer Science Teaching Assistant *Stanford, CA*

- Instructed moderately sized groups of computer science students in the CS106 program
- Graded assignments/exams and provided feedback to students
- Worked closely with Stanford CS professors and other staff to improve course material

ACMLab Oct 2021 - Present

Lab Member, Teaching Assistant *Stanford, CA*

- Built a convolutional neural network (CNN) using PyTorch to predict average income based on satellite imagery
- Achieved 3rd best validation loss out of Stanford teams who completed the project
- Mentoring teams currently participating in the project and advising them on ML model design and PyTorch

AVEVA Jun 2019 - Jul 2019

Software Engineering Intern *San Leandro, CA*

- Led project to create a real-time, weight-based inventory management system using company software
- Constructed weight sensors and wrote Python code on Raspberry Pi to collect and upload weight data
- Created online, real-time visualization of the quantity of snacks in kitchenette snack bins as proof of concept

AVEVA Jun 2018 - Jul 2018

Software Engineering Intern *San Leandro, CA*

- Modified Python code of 4 retro video games to use real-time data to influence game mechanics
- Utilized REST API to relay data from company data management system into the retro games
- Wrote Python script to automate weekly time sheet entries for interns

Projects

RLevator Sep 2022 - Present

- Trained a dynamic elevator control algorithm using reinforcement learning in Python with Stable Baselines 3
- Designed elevator simulation environment with OpenAI Gym and created real-time animation with Tkinter
- Performed 2-4x better than standard elevator algorithm in reducing passenger wait times

K-means Image Compression Sep 2022 - Present

- Programmed an image compression algorithm in Python utilizing unsupervised machine learning
- Converted 24 bit pixels into 4 bit representations with k-means clustering, allowing for 6x compression factor

The Trebled C May 2022 - Jun 2022

- Created Unity 2D platformer game to train pitch interval recognition
- Programmed MIDI piano input to enable more natural player interaction
- Coded dynamic jumping/block placement dependent on pitch to allow for expandable level generation

Composer Predictor Nov 2021 - Dec 2021

- Applied multinomial probability theory in Python to identify the composer of a piano piece
- Generated probability maps containing the probability of any given note being written by Bach or Mozart
- Built probability maps to compute log-likelihood ratio and predict the composer of a given MIDI file

Music Composition Jun 2009 - Present

- Composed over 20 musical pieces, including scores for a short film and The Trebled C

Languages and Technologies

- Python | C++ | C | C# | Java | JavaScript | HTML | CSS | x86 Assembly
- Git | Unix | PyTorch | Numpy | Bootstrap | ReactJS | Unity | Blender | VS Code | LaTeX | Logic Pro X