Arnav Kumar

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Portfolio Website: www.arnav-kumar.com

Education

Princeton University, BSE, Operations Research and Financial Engineering, 3.97 GPA — Princeton, NJ | **May 2024**
Relevant Courses**:** *Algorithms and Data Structures, Probability and Stochastic Systems, Econometrics, Linear Algebra*
Organizations: Hoagie Club (Software Developer), Princeton Data Science, Ethics in Engineering
American Heritage School, High School Diploma, 6.18 Weighted GPA — Plantation, FL | **May 2020**
Valedictorian, National Merit Finalist, Presidential Scholar Candidate, National AP Scholar
Organizations: Mu Alpha Theta (VP), Linguistics (President), Physics Bowl, Science Bowl, Quiz Bowl

Work Experience

RIA Advisory, *Part-Time Full Stack Consultant* — Davie, FL | **Jun 2021 – Jan 2022**
- Applied Angular and Spring to create recruitment management system
- Developed front-end UIs for validation and external systems of company test automation software

Princeton ORFE Department, *Undergraduate Course Assistant* — Princeton, NJ | **Sep 2021 – Dec 2021**
- Graded and taught for ORF245: Fundamental of Statistics

Sandesham, *Website Administrator* — Varanasi, India | **June 2018 – Nov 2020**
- Created and update website sandesham.org for nonprofit in India with goal of providing education to low-income students

Programming Projects

Slider Puzzle Solver (Java)
- Implements A* search algorithm to solve n-by-n slider puzzles through minimum priority queue
- Can determine if board is solvable, number of moves required, and step-by-step solution

Seam Carving (Java)
- Content-aware image resizing feature that can remove vertical/horizontal seams from image
- Applies Dijkstra's directed graph algorithms to find lowest energy path to remove

Image Classifier (Java)
- Created program capable of classifying images such as numbers, animals, fruits, or clothing apparel
- Applies the perceptron and multi-perceptron algorithms to output prediction of image

2D-Tree (Java)
- In 2D graph of a given set of points, program can find nearest neighbor to any point and find all points within given rectangle
- Generalizes binary search tree to two dimensional keys (points with x and y coordinates)

NBA Comparer (Angular, Python)
- Designed website in Angular with ability to compare any two NBA players' statistics side-by-side
- Applied Python to merge datasets and standardize values for comparison

File Tree (C)
- Simulates Linux file system through self-designed nodes for directories and files
- Allows for adding/removing file and directory paths

Web Scraper (Scrapy, Selenium)
- Series of web scrapers that scrape popular websites**,** including Reddit, Billboard, and Indeed
- Utilized Scrapy for website scraping and Selenium for dealing with JavaScript in order to return website data

Activities and Organizations

Hoagie, *Core Software Developer* — Princeton, NJ | **Sep 2021 - Present**
- Apply React and Go to create web applications designed to simplify student life at Princeton
- As a software developer on the Core team, design and implement features used universally on all Hoagie projects

Princeton Data Science Club — Princeton, NJ | **Mar 2021 - Present**
- Participate in annual data science competition with goal of creating model with most accurate prediction of some metric
- Attend workshops on machine learning programming and work with others to answer data-related questions

Skills and Interests

Technical Skills: Java, Python, Angular, HTML, CSS, JavaScript, Scrapy/Selenium, Spring with Spring Boot, Stata, R, C
Areas of Interest: Software Development, Machine Learning, Data Analytics
Awards and Honors: Biomedical Entrepreneurship Network Summit Hackathon – First Place