Nihal Bhatnagar

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EDUCATION

Rice University   Houston, TX
Bachelor of Science in Computer Science, Minor in Data Science. GPA: 3.66, Major: 3.84   *May 2024*
- Coursework: Data Structures and Algorithms, Algorithmic Robotics, Advanced Algorithms, Data Science Models

Awards/Activites: Eagle Scout, 1580 SAT, Summa Cum Laude, Rice Thresher(School Newspaper) Web Developer

EXPERIENCE

Rice University Robotics and Physical Interactions Lab   Houston, TX
Student Research Assistant   *Jun. 2022 - Present*
- Designing detailed simulation models for robotic arm movement using MuJoCo library in C++ and Python
- Modeling novel robots and implementing algorithms in C++ utilizing ROS Noetic

State Farm   Dallas, TX
Software Engineering Intern   *May 2022 - Aug. 2022*
- Full stack web development on range of product tools aimed to orchestrate data flows across enterprise
- Automated E2E workflow data validations, reducing Data QA from 4-6 hours to five minutes for 1000+ devs
- Integrated automation tool into product with React/Redux based UI, reducing overall testing time by 30%
- Architectured REST API service with AWS APIGateway/Lambda and Express.js to facilitate workflow triggers

Software Engineering Co-Op   *Sep. 2021 - Dec. 2021*
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- Modernized 6 team CI/CD pipelines to GitOps
- Deployed Kubernetes clusters in multiple environments to support integration testing across multiple lanes
- Designed PyTest framework implementation to automate validating data flow

Data Engineering Intern   *May 2021 - Aug. 2021*
- Engineered and modified ETL pipelines transforming legacy data and new transactions for downstream analytics.
- Implemented schema consolidation feature utilizing Apache Spark/Maven, saving $2,500/yr on AWS costs
- Reduced team Glue job run times by 5% through data optimization scripts written in Scala and Python
- Utilized Terraform to deploy AWS Glue infrastructures, consolidating legacy data flows for millions of records

University of Texas at Austin, Computer Science Dept.   Austin, TX
Machine Learning Research Assistant   *Jun. 2020 - Nov. 2020*
- Led team of 3 to reduce run times in the motion planning of high degree of freedom arms using neural networks
- Reduced computation time of traditional planning algorithms by implementing TensorFlow and Keras CNN's
- Engineered customized arm simulators using Klamp't and OMPL libraries to visualize and execute trained models
- Utilized Pandas library to generate and format 10,000 workspaces and optimize configuration-space calculation

PROJECTS

Fantasy Football Prediction w. NLP | *NLTK, AWS, React.js/Bootstrap, SQL*
- Captured public sentiment on players to generate rankings for player performance weekly on site built with React.
- Scraped Twitter and Articles via Tweepy/BeautifulSoup API; Fed data into custom ANN to generate rankings.
- Created REST API in AWS; Utilized CloudWatch to trigger Lambda jobs and run models with Python Flask.

Scholastician.org | *React.js, PHP, MySQL, Bootstrap*
- Developed dynamic website aimed at matching tutor and student users nationwide for SAT prep.
- Attained 1000+ users and received a U.S. Congressional Commendation for help during the pandemic.
- Applied MySQL DB to create login system and store tutoring information, Bootstrap for frontend.

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript, HTML/CSS, R, Scala, SQL
Frameworks/Libraries: React.js, Node.js, Jest, PyTest, ROS, Kubernetes, Terraform, Tensorflow, PySpark, pandas