RISHI MASAND

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EDUCATION

University of Illinois at Urbana-Champaign
Masters in Computer Science, B.S. in Computer Science, Minor in Business   *May 2021, May 2020*
Relevant Coursework: Applied Machine Learning, Distributed Systems, Artificial Intelligence, Computer Security, Autonomous Vehicles, Learning-Based Robotics, NLP with Deep Learning

RESEARCH

UIUC FORWARD Lab   December 2019 - Present
· Performing NLP (Natural Language Processing) and data mining research with Professor Kevin Chang.
· Measuring quality of phrases based on traditional and custom quality metrics while leveraging NLTK and stanford-core-nlp.
· Extracting high-quality domain-specific phrases from text corpora with word embeddings (Word2Vec) and other methods.

UIUC SRTI Lab   February 2020 - Present
· Implementing CNN to classify vehicles from a custom-generated dataset of images, using PyTorch.

GEM Illinois Lab (Autonomous Driving)   January 2020 - Present
· Detected and tracked pedestrians using YOLOv3, SORT, scikit-learn, and OpenPose.
· Leveraged ROS and Gazebo to validate motion-planning and perception algorithms.
· Enhanced Gazebo-based simulator with predicted trajectory plotting.

EXPERIENCE

Uptake   May - August 2020
Software Engineering Intern   *Chicago, IL*
· Worked on AI/ML team's data science engine to engineer natural language processing workflows.
· Developed Label Creation Workflow to assign categories to unlabeled work order records.
  · Designed and implemented algorithm to vectorize and cluster text records for label generation.
  · Leveraged scikit-learn, pandas, dask, scipy, numpy, and plotly in workflow implementation.

Uber Technologies Inc.   May - August 2019
Software Engineering Intern   *San Francisco, CA*
· Implemented machine learning model and training pipeline to predict driver earnings for a driving session.
  · Leveraged Michelangelo to select and train model, tune model hyperparameters, and analyze dataset features.
  · Enabled scheduled automation for HIVE table querying, Spark dataset aggregation, and model training.
  · Deployed Random Forest model available for real-time prediction querying.
· Designed and implemented caching layer for driver earnings opportunity data platform.
  · Developed custom caching logic in Go and leveraged Redis as a high speed key-value data store.
  · Implemented extendable, persistent configuration for upstream data providers to specify caching options.
  · Configured alerting and set up monitoring dashboard to track cache metrics.
  · Achieved cache hit rate of >95% and decreased presentation service data querying latency by 75%.

State Farm   January - May 2019
Software Engineering Intern   *Champaign, IL*
· Developed journey mapping web application in AngularJS for agents to track timelines of customer processes.
· Designed and implemented REST API in Go and configured PostgreSQL database for application backend.

Caterpillar Inc.   May - August 2018
Cyber Security Intern   *East Peoria, IL*
· Participated in cloud-based threat modeling and penetration testing to evaluate robustness of software architectures.
· Specified set of technical controls and security suggestions for embedded Linux hardening.

Capital One   January - May 2018
Software Engineering Intern   *Champaign, IL*
· Automated malware execution response data collection for Windows system with Python, Cuckoo sandbox, and syslog.
· Generated labeled dataset of system response data for machine learning driven attack prevention.

UBS   July - August 2017
Software Engineering Intern   *Weehawken, NJ*
· Developed machine learning models to classify fraudulent credit card transactions using Python and R.
· Used k-NN classifier developed from scratch, Tensorflow neural network classifier, and scikit-learn decision tree classifier.

TECHNICAL SKILLS

Proficient In	Python, C++, Java, Swift, Golang, C, JavaScript, HTML, CSS
Have Experience With	Kotlin, C, SQL, Objective-C, Assembly (MPASM, MIPS, x86), PowerShell, Ruby, Thrift
Technologies	PyTorch, Tensorflow, Keras, OpenCV, ROS, Gazebo, Spark, HIVE, AWS, MongoDB, Unity
	Node.js, Express, jQuery, AngularJS, React, Raspberry Pi, Arduino, Alexa Skills, IDA Pro

LEADERSHIP

UIUC CS 461 (Computer Security) January 2019 - Present
Course Staff *Urbana, IL*
· Educational Topics: Application Security, Web Security, Cryptography, Network Security, and Forensics
· Hold office hours.
· Write and grade exam questions.

HackIllinois August 2018 - February 2019
Systems - iOS Lead *Urbana, IL*
· Lead team of student engineers developing iOS app for HackIllinois event attendees.

UIUC CS 126 (Software Design Studio) January 2018 - December 2018
Course Staff *Urbana, IL*
· Educational Topics: Programming Style, Documentation, Testing, Debugging, Modular Design, and Design Patterns
· Lead office hours for assistance with Java and C++.
· Moderated student code review sessions for discussion of student software application implementations.
· Evaluated, critiqued, and graded student software application implementations.

Illini Motorsports (Formula SAE) August 2017 - May 2018
Engineering Project Lead *Urbana, IL*
· Developed system in C to auto-upshift gears of vehicle to decrease shift times in competition acceleration event.
· Interacted with CAN Bus to analyze RPM, wheel speed, and other parameters to determine time to shift.

NOTABLE PROJECTS

UIUC Bus
· Developed native iOS, watchOS, and Android applications to track bus departures and timings for the UIUC campus.
· Shipped apps to App Store and Google Play Store.
· Received >15,000 total downloads.
· Relied on daily by thousands of UIUC students to navigate campus and surrounding area via the CUMTD bus service.

billboard-top-100
· Developed Node.js API (NPM package) to retrieve the top songs, albums, and artists from Billboard's music charts.
· Leveraged TravisCI to implement continuous integration pipeline to test functionality, check code style, calculate test code coverage, and publish package to NPM registry.
· Downloaded over 25,000 times and depended upon by at least 80 public GitHub repositories.
· Collaborate with open source developers to identify and resolve issues to maintain package functionality.

carKeyz
· Designed and implemented custom wireless locking/unlocking and remote start circuit for 1997 Honda CR-V.
· Developed iOS application to interface with in-car circuit over Bluetooth.

uiuc-food
· Scraped and processed data from various sources to build dataset of eateries in the Champaign-Urbana, IL area.
· Developed and publicly deployed dataset visualization with D3.js to display eatery information.

More projects at: https://github.com/darthbatman

NOTABLE AWARDS

1st Place February 2020
Pulse Hardware Hackathon *Urbana, IL*
· Project: PalmReader - a wearable device that converts detected text to tactile Braille.

Grand Prize September 2017
PYGHack *Champaign, IL*
· Project: SpreadBread - an app to connect local food banks to restaurants and grocery stores with extra food.

1st Place April 2017
HackRU *Piscataway, NJ*
· Project: carKeyz - a smartphone controlled lock/unlock system for my 1997 Honda CR-V.

More awards at: https://devpost.com/DarthAnakin