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Thomas Lang

http://bopas2.github.io
US Citizen

Education

Georgia Institute of Technology — Atlanta, GA
B.S. & M.S. in Computer Science, GPA: 3.9/4.0 — *Aug 2018 – May 2022*

- **Concentrations**: Computer Intelligence & Information Internetworks
- **Coursework**: Data Structures & Algorithms, Computer Organization, Objects & Design, Systems & Networks, Design of Algorithms, Intro to AI, Database Systems, Discrete Math, Applied Combinatorics

Work Experience

NCR Corporation — Atlanta, GA
Incoming Software Engineering Intern — *May 2020 – July 2020*

Georgia Tech Research Institute — Atlanta, GA
Software Engineer — *Jan 2020 – May 2020*

- Developed a natural language processing algorithm, in python, for the Apiary malware analysis framework.
- Used VMWare Packer to safely run analysis on malware samples and Docker to modularize code.
- Interfaced with MongoDB and Elasticsearch databases to store results and prototype new scripts.
- Created extensive unit tests and developed web-pages and api endpoints to export results to users.

Georgia Tech Research Institute — Atlanta, GA
Research Assistant — *May 2019 – Dec 2019*

- Wrote novel algorithms to create 3-d models of the seafloor using LiDAR data collected from a plane.
- Developed new visualization features for a proprietary 3-D data visualization software, using C++.
- Wrote optimization algorithms to find unknown environment parameters from sensor data.
- Compiled my results and submitted a paper to the SPIE DCS academic conference.

NASA Glenn Research Center — Cleveland, OH
Research Assistant — *May 2018 – Jun 2018*

- Tested a machine learning algorithm's memory usage in a Arduino by training a small car to avoid obstacles.

Projects

- **CS4400 Group Project: Food Truck Webapp**: A webapp used for organizing Food Trucks. Designed the SQL database schema, including details about location, menu and customer data. Built the backend using Node.js, Express and SQLite. Used React.js and bootstrap to create an appealing frontend.
- **HackGT Hackathon Project: "Alexa Freestyle"**: Used a song lyric API and deep machine learning to generate new songs from existing lyrics. Connected Alexa to Amazon Web Service's "Lambda" service to handle user requests and exceptions. Utilized an AWS "EC2" instance to host a Flask server to run our algorithm efficiently and cache data.
- **CS2340 Group Project: "RISK"**: A multiplayer webapp version of the boardgame "RISK". Built the front-end with Vue.js and Bootstrap. Used a Websocket API to connect to a Play Framework backend.

Involvement

- **Georgia Tech Automotive Research Lab**: Software Team Lead for the student lead autonomous car research group. Managed a team of eight students in completing software tasks on time using agile development. Used the Robot Operating System, python and C++ to implement self-driving algorithms and simulations.
- **Robojackets**: Designed and implemented a new defense strategy for Georgia Tech's autonomous robot soccer team.

Honors & Awards

- **Eagle Scout**: Achieved the rank of Eagle Scout through the Boy Scouts of America.
- **Hyland Hackathon (First Place)**: Built an Android app that encourages exercise through a videogame.
- **Capital One SES Hackathon (Second Place)**: Built a webapp that predicts Lyft ride-sharing price surges..

Skills

Languages: Python, Java, HTML, CSS, C++, C, Javascript, Scala, and MATLAB
Technologies: Git, Node.js, React, AWS, Linux, SQL, MongoDB, Elasticsearch, Bootstrap, Linux, Vue.js, Flask, ROS