Connor Passe

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EDUCATION

Duke University — Durham, North Carolina
Bachelor of Science in Mechanical Engineering — May 2021
- **GPA:** 3.6/4.0

EMPLOYMENT

AML Group — Durham, NC
Co-Founder / Software Engineer — *Sept. 2021 – Present*
- Awarded $900,000 Department of Defense subcontract to perform R&D services for US Army Special Operations Command.
- Led team of 6 engineers to develop Machine Learning models to provide efficient, on-device wireless signal propagation modeling to enable troops to evade adversarial radio jamming using mobile Android devices.
- Trained and evaluated models including neural nets, random forest, and regression-based models.
- Personally developed novel, Google-based Controlled Unclassified Information (CUI) workspace, compliant with NIST 800-171 cyber security requirements leveraging FedRAMP compliant applications.

First Light Asset Management — Minneapolis, MN
Analyst — *May 2020 – Aug. 2020*
- Developed various python web-scrapping scripts to automate downloads from SEC EDGAR database and Wells Fargo client trade-confirmation web portal.
- Performed primary research on public and private biotech companies alongside analyst team.

PROJECTS

On-Device Signal Propagation Modeling iOS App
GitHub: https://github.com/connor-passe/Sig-Map
Article: https://connorpasse.com/projects/2022/11/05/Sig-Model.html
- Individually developed iOS app capable of performing on-device wireless signal propagation modeling leveraging a custom trained TensorFlow Deep Neural Net.
- Converted TensorFlow model into mobile-optimized model using Apple's CoreMLTools framework.
- App leverages the SwiftUI framework and allows the user to select transmission frequency, location, and heatmap prediction radius.
- Colored heatmap corresponding to the predicted signal loss is overlayed on the map.
- Achieved >200 square kilometer heatmap generation in under a minute during real-world testing.

Vitreoretinal Surgical Medical Device
Link: https://connorpasse.com/projects/2021/05/05/Medical-Device.html
- Led a team of 9 retinal surgeons / engineers to design an integrated electronic medical device for improving vitreoretinal surgery.
- Filed a provisional patent in coordination with Duke Office of Licensing and Ventures.
- Rapidly iterated over 10 prototypes in two-week sprints, each tested live in porcine (pig) eyes at the Duke Hospital Eye Center's wet lab.
- Designed custom circuit board, 3D-printed steel body, and power supply system for prototypes.

Weather Forecast Web App
GitHub: https://github.com/connor-passe/weather-app
Live Site: https://connor-passe.github.io/weather-app/
- Created weather forecast site that leverages an OpenWeatherMap API.
- Leverages JavaScript / HTML / CSS and bundled using webpack.
- Takes user location input and displays current weather conditions and daily forecast for upcoming week.

SKILLS, TOOLS & INTERESTS

Languages: Java, Python, Swift, JavaScript / HTML / CSS, MATLAB
Tools: TensorFlow, Git, SwiftUI, Webpack, Docker, AWS, Asana, Webflow, Solidworks, Fusion 360
Interests / Activities: Duke Basketball, SCUBA Diving, Volleyball, Cartography, Oatmeal Enthusiast, Travel