

Josiah Laivins

Charlotte NC | 740-641-4014 | jklaivins@gmail.com

Github: <https://github.com/josiahls?tab=repositories> | <https://www.linkedin.com/in/josiah-laivins-38605a113>

Education

Bachelors and Early Masters Program in Computer Science Focused in AI and Robotics,
at University of North Carolina at Charlotte

Relevant Courses: Database Design & Implem, Digital Image Processing,
Artificial Intelligence, Intro to Prob & Stat, Data Structures, Software Engineering

Undergrad
8/15 - 5/19
Grad
5/19 - ongoing

Work Experience

Senior Tech Lead

Mariner - Charlotte NC

6/21 - present

- Lead the development and success of Spyglass Visual Inspection (SVI)
 - Transitioned into managing team members contributing to SVI
 - Facilitated PRs, Code Reviews, Goal Setting, Task Breakdown
 - Partnered with Vice President of Product Development to set goals/roadmaps for SVI in order to have company-wide visibility of the project progress and release dates
 - Developed product wide documentation system to support team members

Machine Learning Engineer / Product Co-Architect

Mariner - Charlotte NC

6/19 - 6/21

- Co-Architected Spyglass Visual Inspection (SVI)
 - Deep Learning framework for deployment, updating, and managing computer vision models in spotty-internet connected devices in manufacturing settings
- Developed deployment tooling using python, fastai, and nbdev for use by SVI team at Mariner. Tooling extends Azure CLI for managing cloud resources
- Architected microservice architecture with <1min update downtime, and zero model update downtime
- Created data pipeline for current and future data management labeling
- **Deployed critical code/models to multiple factories in production**
- All tooling and auto-documentation is constrained by versioning and proper packaging
- Invented novel semi-supervised data labeling tool
- Managed multiple Ubuntu machines running live on factory lines
- Currently prototyping auto-ml tooling for more rapid model training and deployment

Research Assistant / Intern for Dr. Mohsen Dorodchi

University of North Carolina at Charlotte - Charlotte NC

6/18 - 6/19

- During summer 2018, developed a computer vision system for tracking student gaze
 - Used pre-trained Tensorflow models to achieve this

Projects

fastrl

Thesis Project / Personal (In the moving fast and breaking things stage)

9/19 - present

- Lets do what fastai has done for computer vision and do the same for reinforcement learning
 - Repo: <https://github.com/josiahls/fastrl>
 - Auto-generated docs: <https://github.com/josiahls/fastrl>
- Extends the fastai API to reinforcement learning
- Uses novel nbdev library for true literate programming
- Added: DQN, DDQN, Dueling DQN, SAC, DIAYN, A2C, A3C, TRPO, PPO
- Currently converting original tensorflow DADS implementation into Pytorch as **well as doing a complete refactor in February for speed and clarity improvements**

9/19 - 12/21

fastai

Open source contributor

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- Created and merged PR <https://github.com/fastai/fastai/pull/3659>

Robot Chef

Research Project

- Used Tensorflow implementation of Mask R-CNN for performing object classification and segmentation using pre-existing dataset
- *Won 3rd place at UNCC Innovative Computing Projects Showcase 2018 Fall*

Skills

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| • Programming Languages: Python, C++, Javascript, Typescript | • More Tools: Azure Pipelines, Github, SQL, |
| • Tools: OpenCV, TensorFlow, Pytorch, Android Studio, Angular, MongoDB, Azure, Fastai, Nbdev | • Operating Systems: Linux Ubuntu 18.04, ROS Kinetic and Melodic |
| | • Other Skills: Agile workflows, learning Mandarin |