Jared T Nielsen

jaredtnielsen@gmail.com ▪ (703) 663-0546 ▪ jaredtn.com

Experience

Machine Learning Scientist – Perception, Control & Cognition Lab *Aug 2018 - Present*

- Predict and prevent equipment failure for a semiconductor manufacturer via clustering and anomaly detection; each super-cooling pump preserved saves ~$50,000.
- Conduct research into decoding sentence embeddings, which will enable "sentence synonyms" for conversational AI and text summarization.
- Recreate state-of-the-art models in computer vision, natural language processing, and reinforcement learning using PyTorch and TensorFlow.

Software Engineer Intern – Microsoft *May 2018 - Aug 2018*

- Enabled ~$100,000 in immediate monthly recurring revenue via 1,000 licenses and 25,000 devices.
- Implemented a custom network connection type for enterprise security software (Intune & Zscaler VPN).
- Communicated clearly with external vendor to develop and test cross-platform integration.
- Learned massive-scale version control, unit/integration testing, and microservice architectures.

Lead Software Developer – MantisX *Jun 2016 - May 2018*

- Constructed and maintained a live production database handling 25,000 unique users and 8 million shots for a firearms training system startup.
- Improved shot detection accuracy by ~50% with a convolutional neural net, then deployed the TensorFlow Lite model on iOS and Android.
- Engineered a competitive private group web platform using Python, Amazon Web Services, and PostgreSQL; this opened a new market segment and negotiations with both Cabela's and the U.S. Marines.
- Led a team of three developers to establish stable APIs and secure authentication between web and mobile.

Projects/Awards

- 1st place state science fair, computer science – Othello AI player via game tree search with alpha-beta pruning.
- Microsoft Hackathon points award – Integrating Cortana with the Raspberry Pi.
- Predicted March Madness using a modified PageRank algorithm to compete in ESPN's bracket challenge.
- Wrote genealogical Android app which integrated with Google Maps to trace ancestry across the globe.
- Created a facial recognition program using matrix factorization, based on the eigenfaces method.
- Implemented deep learning image segmentation model to detect cancerous regions in cell tissue images.

Software Skills

- Languages:
  - Python, Java, C#, C++, SQL, HTML5, CSS, JavaScript.
- Frameworks:
  - PyTorch, TensorFlow, Keras.
  - Git, Amazon Web Services, Django, NumPy, PostgreSQL.

Education

MS, Computer Science | Brigham Young University *Class of 2021*

BS, Applied Math | BYU *3.80 GPA, Class of 2019*

Coursework: Algorithm Design, Differential Equations, Linear Algebra, Android Development, Deep Learning