Andrew Gilbert

Machine learning engineer

adgilbert@icloud.com

+1 (970) 614 5564

https://adgil.dev/

https://www.linkedin.com/in/adgil/

SUMMARY

I'm a machine learning engineer working on applying deep learning to develop cutting edge technologies. I push myself to constantly learn new things and I bring a curious mind, adventurous spirit, and intense concentration to all my projects.

Skills

Deep learning:
PyTorch, Keras, TensorFlow, sci-kit learn

Data Science:
pandas, numpy, scipy, OpenCV, PostgreSQL

Data Visualization:
- Jupyter, matplotlib, seaborn

MLOps:
MLflow, visdom, TensorBoard

ML Deployment:
OpenVino, ONNX, Pip, REST API, Flask, AWS

DevOps:
Agile, GitHub, Jenkins, PyTest

Software Languages:
Python, C++, R, MatLab, SQL, HTML, CSS

Deep learning topics:
Measurement, segmentation, synthesis, generative adversarial networks (GANs), medical imaging, echocardiography

Other topics:
Technical communications, digital signal processing, linear systems, computational modeling

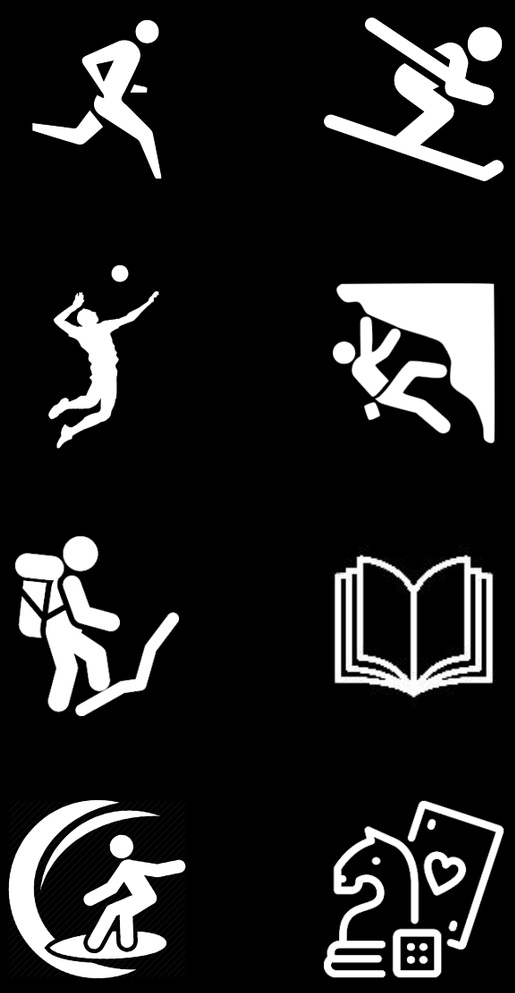
Hardware:
VLSI, VHDL, Verilog, FPGA, Cadence

Languages

English: Native

French: basic conversational

Interests



EDUCATION

PhD Informatics — University of Oslo
May 2018 - July 2021 — Summa cum laude, Marie Sklodowska-Curie fellow
Thesis: Automating echo analysis with deep learning: measurement, workflows, and data generation

MS Electrical Eng. — Stanford University
September 2016 - March 2018 — 3.71 GPA
Start-up co-founder (raised funding), research assistant (neuro), and teaching assistant (VLSI design)

BS Electrical Eng. — University of Utah
August 2012 - May 2016 — Summa cum laude, 4.0 GPA, Honor's college
Thesis: Computational Modeling of the Rat Hippocampus for Improving Neural Stimulation

Experience

Data Scientist — GE Healthcare, Cardiovascular Ultrasound R&D, Oslo, Norway
March 2021 - Present
- Designing and leading national and international research projects focused on deep learning in echocardiography.
- Building deep learning measurement, classification, and synthesis algorithms for Vivid line of echocardiography scanners.
- Mentoring new data scientists and PhD students with projects on a wide range of machine learning topics.
- Constructing inference, database, and continuous-integration tools to streamline AI development and implementation

Researcher — GE Healthcare, Cardiovascular Ultrasound R&D, Oslo, Norway
May 2018 — March 2021
- Lead AI developer for two of the three main AI algorithms implemented in GE Vivid echocardiography scanners.
- Created generative adversarial network data synthesis pipeline for automating data collection and labeling.
- Driving data collection/maintenance and algorithm development/maintenance best practices
- Lead author of four US patents on artificial intelligence in echocardiography.

CTO/Co-Founder — TRVISE, Stanford, CA, USA
June 2017 — March 2018
- Worked with two other co-founders to define our mission, strategy, initial product and business plan.
- Pitched to investors and VCs to build connections and raise funding (raised pre-seed).
- Managed team of iOS and front-end web engineers and performed back-end web/database development.
- Developed machine learning algorithms for user recommendation systems.

Research Assistant — Brains in Silicon Lab, Stanford, CA, USA
Sept 2016 - March 2017
- Developed and tested convex optimization methods for increasing temperature robustness on a neurmorphic chip.

Research Assistant — Lazzi Lab, Salt Lake City, UT, USA
Nov 2012 - Sept 2016
- Collaborated with multidisciplinary labs across the country to develop neural prostheses
- Built out the capabilities of C++ neural modeling software to run my own experiments
- Used Python to build models of the retina and hippocampus based on the latest research available

Research Assistant — IT'IS Foundation, Zurich, CH
Summer 2015
- Helped develop the capabilities of the next generation of the Sim4Life computational modeling software.
- Wrote Python code to build a mass neuronal dynamics model for analyzing neuron behavior due to external electric fields and a diffusion tensor imaging based fiber tracking script.

Engineering Intern — L3 Harris, Salt Lake City, UT, USA
Summer 2013 & summer 2014
- 2014: Debugged and fixed 30+ nano-satellite communication boards in preparation for launch.
- 2013: Evaluated and proposed new company-wide strategies for automated defect detection.

Projects

Synthetic echocardiography generation: A framework using generative adversarial networks and anatomical models to automatically create large, heterogeneous datasets for training deep learning models. Published in Transactions in Medical Imaging and available as an open-source software package — adgil.dev/#data-generation.

Left ventricle dimension measurement: A CNN-based model for automatically measuring important dimensions of the left ventricle with high accuracy and repeatability. Published in the MICCAI conference and integrated within the GE Healthcare Vivid Ultra Edition software release — adgil.dev/#lv-measurement

Doppler type classification: A CNN-based model for automatically classifying echocardiography Doppler images. Published in JBHI and integrated within the GE Healthcare Vivid Ultra Edition software release — adgil.dev/#doppler-classification

DeepBlur: Deep convolutional networks, GANs, and Wiener Filtering to automatically de-blur images.
Markerless pose estimation: Convolutional neural networks for automatic 3D mobile pose estimation.
CF recommendations: Collaborative filtering algorithm for providing personalized recommendations based on Yelp data.
Neural networks in hardware: A digital neural network built in 600nm CMOS. Our design was one of 3 chosen to be fabricated.

Awards

Outstanding EE Award: Top graduating senior in the electrical engineering department at the University of Utah
Utah Engineer Council Scholarship: Top junior engineering student (across departments) at the University of Utah
Other: Honors at Entrance Scholarship, Dean's List every semester, National Merit finalist