

Engineer with: +2 yrs professional experience in computer vision/deep learning from startups, broad technical background in computer science, AI and photonics from BS/MS education, +4 yrs professional experience in full stack software development from startup.

WORK EXPERIENCE

- Jan 1, 2017 - Jan 25, 2019** **DolphinAI**
- Research role
 - Goal was to identify and classify roofs and their salient features from aerial imagery data
 - Designed and trained Convolutional Neural Network models for edge-detection/roof-identification and roof-segmentation
 - Data collection
 - Data annotation
 - Implemented white papers
 - Extensive experience training models
 - Used Keras + Tensorflow
- Sept 30, 2016 - Dec 6, 2016** **Tarsier**
- Research role
 - Worked on autonomous recognition of UAVs in image/video data
 - Wrote GUI in python
 - Worked on training of and docker installation of the core model, Inception V3 in Keras + Tensorflow
 - Team given honorable mention in MD5 Hackathon in Brooklyn, NY of fall 2016
 - One of principle investigators (group composed of Stanford PhDs and Business students and one industry computer vision engineer)
- January 12, 2015 - Present** **Matthews South**
- Have written majority of company's Front-End
 - Have helped write and design Back-End API for Front-End
 - Have helped write some of Back-End financial modeling
- June 21, 2014 - September 12, 2014** **SpaceX internship**
- Wrote web/server software package for viewing/manipulation of internal database in python/javascript/jquery
 - Wrote EELV certification tracker in python
 - Systems certification for EMI related aspects of the EELV program at SpaceX

RESEARCH EXPERIENCE

- January 6, 2014 - December 16, 2014** **Student Researcher in SnowFort project under Professor Ram Rajagopal in the Department of Civil and Environmental Engineering**
- Embedded systems with emphasis on over-the-air programming
- January 6, 2013 - June 25, 2013** **Research Assistant in Professor Digonnet's group in the Applied Physics Department at Stanford University**
- Fiber Optics and Photonics with emphasis in CROWs
- June 21, 2012 - September 14, 2012** **Summer Research in University of Illinois Urbana-Champaign Remote Sensing group**
- Built and Characterized 4-stage 50W Helium fiber laser in conjunction with PhD student Tony Mangogni (UIUC) and Dr. Peter Dragic (UIUC) under Professor Gary Swenson (UIUC).
 - Power board for ongoing Cubesat satellite project (Illinisat)
- June 21, 2011 - September 15, 2011** **Summer Research in University of Illinois Urbana-Champaign Remote Sensing group**
- LabVIEW software to monitor power supply lines for group's Chile station
 - Initiated ongoing radar project to be used in LIDAR research stations used by the research group
 - Prepared software and hardware for use and delivery to group's Chile research station
- September 25, 2010 to June 2011** **3 Academic Quarters of Research in Very Low Frequency Group within the Space, Telecommunications, and Radioscience Laboratory at Stanford University**
- Goal was to design and build a fully functioning UAV capable of flying into a thunderstorm and taking scientific measurements such as E-Field data
 - Designed unique airframe structure to withstand thunderstorm conditions, one prototype built
 - Worked on design and testing of unique electric field sensor for UAV
- June 20, 2010 - September 20, 2010** **Summer Research in Very Low Frequency Group in the Space, Telecommunications, and Radioscience Laboratory at Stanford University**
- With research partner developed prototype Unmanned Aerial Vehicle (UAV) to penetrate thunderstorms and collect Electric Field Data
 - Constructed and programmed fully functioning autopilot
 - Designed and constructed SD card memory storage shield for the autopilot
 - Designed and constructed working airframe
 - Airframe and autopilot flew successfully

EDUCATION

Stanford University (MS in EE, Degree awarded January, 2015):

Focus: Lasers, Optoelectronics and Quantum Electronics

Stanford University (Undergrad):

Major: B.S. in EE; Degree awarded June, 2012.

Relevant Coursework at Stanford University and Work Skills:

COMPUTER SCIENCE

- Computer Vision
 - Keras + Tensorflow + Python
 - Current part-time work at DolphinAI
 - Past work at Tarsier
 - Past personal projects in Kaggle Competitions and IEEE Doom competition
- Machine Learning
 - Wrote software for categorizing music genres in class project for CS229 course
- Statistical Learning
 - Taken online via Stanford University (statement of completion available)
- Python
 - Wrote tracking software packages at SpaceX
- Meteor
 - Wrote and maintain majority of Front-End for Matthews South
- Coffeescript/Javascript
 - Wrote and maintain majority of Front-End at Matthews South, Issue tracking software at SpaceX
- MongoDB
 - Wrote and maintain majority of Front-End at Matthews South
- iOS
 - CS193P at Stanford
 - Implemented Tetris game
- C++
 - Computer systems coursework
- C
 - Computer systems/operating systems coursework
- Experience with writing power line metering software for NI-DAQ module 6008 for University of Illinois Urbana-Champaign
- LabView
- Embedded Systems
 - CubeSat, Arduino microcontroller, Tmote Sky
- Java

- Algorithms
- Numerical Methods
- Introductory Cryptography

PHOTONICS

- Intermediate Semiconductor Physics
- Optoelectronic Device Physics
- Introductory Nanophotonics
- Nonlinear Optics
- Intermediate Electricity and Magnetism
- Introductory Materials Science with Nano-scale emphasis
- Quantum Mechanics (2 quarters)
- Optical Micro- and Nano-Cavities (second quarter to be taken in coming fall)
- Photonics Laboratory (to be taken in coming fall)

MATH

- Linear Dynamical Systems
 - Previously Course Grader for Linear Dynamical Systems
- Signals
- Statistics

OTHER

- Introductory Circuits
- SLE intensive writing and philosophy
- Introductory Digital Logic
- Introductory Verilog Design

PROFESSIONAL SKILLS AND HOBBIES

- Great communication skills (verbal as well as written);
- Intermediate level speaking, reading and writing in Spanish
- Divemaster rated Scuba Diver
 - As hobby, lead tours and help with course instruction
- Underwater Photography
 - x2 Honorable mention in Monterey Shootout Competition
- Guitar as well as other instruments
- Active in outdoor activities
- Enjoy fitness
- Past Jiu-Jitsu club member
- Enjoy building and maintaining fully-functioning cabins in remote area of Northern Ontario, Canada