Sep 26, 2022

Alex Martens

Software Developer
MSc | 5 years of experience

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https://github.com/alexsmartens

Toolbox: Ruby / Python / JavaScript / React / Docker / Heroku / C / R / SQL / MongoDB / Redis / Machine Learning / Computer Vision

Experience

Oct 2020-Sep 2022

Full Stack Developer @Wefunder *(YC startup W13)*, San Francisco, CA

My mission: improving and extending crowdfunding platform

- achievements, developed or significantly improved the following:
  1. automated identity verification via LexisNexis and manual verification pipeline
  2. tool for founders to manage investments and analyze campaign success
  3. e-contract integration into an existing workflow
  4. automated reconciliation for ACH payments
  5. admin refund tool
- tools: Ruby on Rails, JavaScript, React, CSS, PostgreSQL, RSpec, Heroku, Vim

Jul 2019-Jul 2020

AI Developer @Katerra, Toronto, ON, Canada

My mission: smart thermostat development *(similar to NEST)*

- achievements: proposed, developed and validated a humidity based occupancy model for smart thermostats
- concepts: data science, prototyping, experiment design, computer vision
- tools: Python, Pandas, Matplotlib, Scikit-learn, Statsmodels

Feb 2019-Jul 2019

Data Engineer / Software Programmer @Real Tech, Toronto, ON, Canada

My mission: developing platform for managing smart water quality sensors

- achievements: 1 implemented ML model training service and deployed it on AWS; 2 developed dashboards with custom JS D3 widgets for real-time IoT data visualization; 3 maintained company's IoT platform
- concepts: data visualization, microservices, IoT platform
- tools: JavaScript, D3, Python, AWS, Flask, Pandas, Matplotlib, Thingsboard

Nov 2018-Mar 2019

Python Developer @Coursera, San Francisco Bay Area, CA *(remotely)*

My mission: developing course materials for self driving car courses

- achievements: developed assignments and automated graders for courses offered by the University of Toronto that have 60K+ enrollments
- concepts: visual odometry, PID controllers, stereo vision, simulation
- tools: Python, Docker, OpenCV, CARLA
- project: https://www.coursera.org/specializations/self-driving-cars

Jan-Jun 2018

Software Developer @Salu | Health Gauge, Edmonton, AB, Canada

My mission: developing app for interaction with smart blood pressure sensors

- achievements: designed and developed a full-fledged Android/iOS app
- concepts: MVC, signal visualization, REST, Bluetooth communication, UI/UX
- tools: React Native, JavaScript, Python, Flask, Pandas, Matplotlib

2015-2017

Research Assistant @University of Alberta, Edmonton, AB, Canada

My mission: researching innovative tools for construction industry

- thesis prezi: Automated Tool for Visual Progress Tracking in Construction
- achievements: improved computation time in 10 fold and cut down number of manual steps required. Tested the proposed approach at a Ledcor's site
- concepts: SfM, MVS, ICP, Gaussian Mixture Model, CPD, Hausdorff distance
- tools: Matlab, Python, Bash, C++

About

I am a full stack engineer and I deliver results. I am excellent at taking on hard problems, navigating complex codebases and producing high quality software.

Software engineering is my job and hobby, I am always curious and constantly learning: reading books, collaborating and experimenting.

Over the last 5 years, I have helped innovative companies to deliver outstanding customer experiences and solve complex problems. I am passionate about writing better code faster and producing reliable, maintainable and extendable software. Much of my code is still running in production.

I am looking for a fast-paced environment where people are paying attention to detail and are not afraid to ask questions or express their opinion. My ideal role would be among a team of creative result-driven engineers who I could grow professionally with.

Spare Time Projects and Hobbies

Built, tuned up and ran multiple 7-GPU cryptocurrency mining rigs.

Built and set up a custom router running pfSense for improved privacy and security with features like ad/tracker traffic filtering, Suricata, OpenVPN.

Set up a personal cloud running Nextcloud with ZFS, auto data backup, Plex media server.

Built and ran a high performance workstation for machine learning and computer vision projects with: 32-core AMD Threadripper 2990wx, Nvidia 1080Ti, 64 GB four channel RAM, custom CPU-GPU water cooling loop *(EKWB)*.

Installed lots of advanced features to my BMW: blind spot monitors, collision prevention assist, surround view camera system, head-up display, CarPlay, M-Sport brakes.

Education

2015-2017

MSc in Construction Project Management and Engineering
at University of Alberta, Edmonton, AB, Canada

- Algorithms & Data Structures, CSC263
- Software Tools & Systems, CSC209
- Machine Learning, CMPUT551
- Applied Regression Analysis, STAT502
- Statistics for Engineering, STAT235
- Computer Vision, Udacity CS6476
- Simulation, CIVE606

Volunteering

2009-2013

Head of Students' Union

- represented students' interests at the university and local government
- recruited volunteers
- managed teams
- initiated and organized events