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Alex Martens

Software Developer
MSc | 5 years of experience



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



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github.com/alexsmartens

Experience

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.

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 Engineering and Project Management

@[University of Alberta](https://www.alberta.ca), 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

Oct 2020-Sep 2022

Full Stack Developer @[Wefunder](https://wefunder.com) (YC startup W13), San Francisco, CA

My mission: improving and extending crowdfunding platform

I delivered high quality software in team and individual projects. I was involved in the full cycle of software development: idea exploration; project design, planning and deployment scheduling; building software; maintenance and continuous improvement.

I utilized Ruby on Rails, React and PostgreSQL to build:

- internal backend tools and scripts like auto-generated e-contracts, automated payment reconciliation and refund tool. **My work** added more management visibility into the company's money flow along with allowing us to disburse money faster and generate revenue earlier in 20% of cases.
- customer facing tools like identity verification pipeline, campaign management and analytics dashboard. **My work** helped to drastically improve customer experience and reduce the number of support requests by 30%.

Jul 2019-Jul 2020

AI Developer @[Kattera](https://kattera.com), Toronto, ON, Canada

My mission: developing smart thermostat (similar to NEST)

I proposed and developed an occupancy model based on humidity and temperature sensor signals. A **provisional patent** was filed based on my invention.

I used Python (including Pandas, Scikit-learn, Statsmodels, Matplotlib) to run experiments, develop and validate the occupancy model.

Feb 2019-Jul 2019

Data Engineer / Software Programmer @[Real Tech](https://realtor.com), Toronto, ON, Canada

My mission: developing platform for managing smart water quality sensors

I brought automated water quality analysis to the customers by extending an open source IoT platform (Thingsboard) used by the company.

I used Python (including Pandas, Scikit-learn) to train ML models. I deployed inference services on AWS and on company owned servers with Flask.

I used JavaScript (including D3) to build customer facing dashboards for real time water quality analysis.

My work resulted in full automation of the water scanning and analysis process. Now the scans are available in real time with an interactive UI instead of having a technician to run the analysis and provide customers with the results and insights.

Nov 2018-Mar 2019

Python Developer @[Coursera](https://coursera.org), San Francisco Bay Area, CA (remotely)

My mission: developing course materials for self driving car courses

I developed assignments and automated graders for Self Driving Cars courses offered by the University of Toronto. More specifically, I contributed to the following topics: visual odometry, PID controllers, stereo vision, simulation.

I used Jupyter Notebook (Python, OpenCV, CARLA) for developing assignments and Python for building scalable graders with Docker containers.

These courses were taken by **60K+ happy students**. [Course overview](#).

Jan-Jun 2018

Software Developer @[Salu | Health Gauge](https://salu.ca), Edmonton, AB, Canada

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

I designed and developed a full-fledged Android/iOS app using JavaScript (React Native). My work included designing UI/UX and app architecture, building Bluetooth communication with sensors and dashboards for signal visualization.

2015-2017

Research Assistant @[University of Alberta](https://www.alberta.ca), Edmonton, AB, Canada

My mission: researching innovative tools for construction industry

I proposed and developed a framework for automated progress tracking of construction projects via drones. My work relied on **using** SfM, MVS, ICP, Gaussian Mixture Model, CPD, Hausdorff distance, Matlab, Python, Bash, C++.

The framework developed by me improved industry standard computation time in 10 fold and cut down number of manual steps required. [Prezi](#) 🖱️