Kevin McVey

Computer Vision, Applied Research

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Work Experience

Glowforge

Seattle, WA

Senior Software Engineer & Tech Lead, Glowforge Research Engineering — May 2018 - present
Software Engineer — Feb. 2016 - May 2018
Associate Software Engineer — Sept. 2015 - Feb. 2016

- Set company's software R&D agenda and led interdisciplinary teams (4-5 engineers) in prototyping and productizing computer vision research for Glowforge's cloud-controlled CNC laser cutter & engraver.
- Awarded multiple US patents for new inventions in the creative tools / fabrication space.
- Designed, trained, and evaluated deep learning models in the spaces of semantic segmentation, object detection, and classification. Models have been exercised over 100MM times in production.
- Built training datasets of over 1MM images using crowdsourcing and automated annotation with sensors.
- Developed algorithms for many customer-facing computer vision features. Areas include 3D reconstruction, multi-view geometry, feature detection & matching, camera calibration, and localization.
- Scaled computer vision services on Google Cloud to support over 100,000 requests per day.
- Designed Glowforge's CNC-optimized vector graphics format and built a corresponding web service that converts millions of customer-designed SVGs and PDFs per month.
- Developed robotic factory calibration tools for manufacturing precision camera hardware at scale.
- Mentored junior engineers, wrote technical documentation, and made frequent company-wide presentations.

Amazon

Seattle, WA

Software Engineer, Appstore Developer Portal — July 2014 - Sept. 2015

- Architect of multi-tenant data collection and reporting pipeline used to track worldwide Appstore usage.
- Mentored a summer intern to a successful hire.

Skills & Education

Languages	Python, C++, JavaScript, Ruby, Java, C, Assembly, Rust, Swift, Bash, HTML
Tools	OpenCV, Ceres-Solver, Tensorflow, Numpy, Pandas, CUDA, Git, NodeJS, Flask, Rails
Cloud	Kubernetes, Docker, Google Cloud Platform, MySQL, Redis, AWS

University of Virginia

Charlottesville, VA

B.S. with Distinction: Computer Engineering & Minor: Architecture — 2010-2014
Thesis: Personalization in SCOT, How User Groups Redefine Closure

Patents & Publications

Edge Detection for Computer Numerically Controlled Fabrication
USPTO Application 17/668,988, Filed 2022-02-02

Multipoint Distortion Correction
USPTO Provisional Application 63/239,460, Filed 2022-01-14

Computer Numerically Controlled Fabrication Using Projected Information
USPTO Application 17/133,908, Filed 2020-12-27

Fabrication with Image Tracing
USPTO 11,249,456 B2, **Granted 2022-02-15**, Filed 2017-11-27

Calibration of a Computer-Numerically Controlled Machine
USPTO 11,137,738 B2, **Granted 2021-10-05**, Filed 2017-11-27

How I Accidentally Ruled A World Power (And Nearly Paid The Price For It)
TEDxUVA, 2014

The Electronic In-Patient Progress Note: Less Is More
L. Colligan, C. Coleman, S. James, L. Dobry, K. McVey, S. Borowitz
American Medical Informatics Association, 2013
Winner of the national AMIA Student Design Challenge