

# JOHN HARTQUIST

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Software Engineer | Full-stack, Machine Learning  
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## PROFILE

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Full-stack software engineer with expertise in machine learning. Skilled in building data pipelines and dynamic web applications using a range of technologies. Proven track record of delivering high-quality solutions that meet business needs. Lifelong learner with a strong desire to continuously improve and stay current with industry trends and techniques.

## EXPERIENCE

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Sept. 2021 –  
Present

**Lowe's Innovation Labs**, *Senior Software Engineer*

- Created prototype of AR experience for measurement estimation and virtual object simulation in user's spaces.
- Researched and prototyped with various graph database technologies for storing and manipulating home data from various data sources.
- Developed web app for inspecting and ingesting 3D assets, along with custom open-source product viewer.
- TypeScript, React, Next.js, Babylon.js, Python, Unity, C#, iOS, SwiftUI

April 2019 –  
June 2021

**Sigma IQ**, *Senior Software Engineer, ML Platform*

- Developed financial reconciliation algorithm, transforming research prototype into production grade system in Python.
- Migrated parts of ML pipeline to Spark & Scala achieving >100x speedups.
- Wrote tools for managing datasets, training models, and evaluating performance improvements over time.
- Built full-stack platform for running Jupyter notebooks in production.
- Python, Scala, Spark, TypeScript, React, Next.js, Docker, GCP, XGBoost

Jan. 2018 –  
April 2019

*Time off for full-time, self-directed study of data science, machine learning, deep learning, through projects, courses, and books.*

April 2015 –  
Dec. 2017

**Ruvixx Inc**, *Senior Software Engineer*

- Developed enterprise web platform used to manage licensing and brand protection for large clients including HDMI, Dolby, and Philips.
- Engineered data model, optimized SQL queries for complex reports, and developed real-time dashboards in multi-tenant architecture.
- Managed bi-weekly production releases, data migrations, and automated test suites.
- Ruby on Rails, JavaScript, Angular, SQL

May 2014 –  
April 2015

**Emjoyment**, *Software Engineer*

- Implementation of native iOS app for “Tinder for Jobs” startup.
- Developed features for backend API and web app.
- Python, Django, Objective-C, SQL

July 2012 –  
May 2014

**Amazon.com**, *Software Development Engineer*

- Worked on Royalties and Financials team to calculate royalties for independent publishers on CreateSpace platform.
- Built internal services with test driven development, collaborating across many teams.
- Supported feature requests and maintenance for legacy packages.
- AWS, Java, Spring

Jan. 2011 –  
Jan. 2012

**iFixit.com**, *Software Developer*

- Developed website features and tests focusing on compatibility across supported browsers.
- Created new drag-and-drop file uploader for uploading and validating image assets.
- PHP, MySQL, JavaScript, CSS

## EDUCATION

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2007 –  
2012

California Polytechnic State University, *San Luis Obispo, CA*

- Master of Science in Computer Science
- Bachelor of Science in Computer Science

Thesis: Real-time Musical Analysis of Polyphonic Guitar Audio

## EXPERTISE

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- Deep Learning
- Data Analysis
- Rapid Prototyping
- Data Visualization
- Continuous Integration
- Functional Programming
- Test-driven Development
- TensorFlow, PyTorch
- NumPy, pandas
- Svelte, React, Vue
- D3.js, Three.js, Babylon.js
- GCP, AWS, Git, Docker
- Rust, Scala
- Figma, CSS, SCSS

## TECHNICAL SIDE PROJECTS

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- Experimental fine-tuning of ResNet for audio classification
- FastAI audio module for generating spectrograms on GPU at training time
- Real-time audio visualization; Three.js, TensorFlow.js, Web Audio
- Rubik’s Cube solver using deep reinforcement learning (PyTorch)
- Using OpenAI ChatGPT API to incrementally generate Rust applications