

Jonathan Abbott

Innovation, Mechatronics, AI
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Education

Massachusetts Institute of Technology

Cambridge, MA

- Masters in Mechanical Engineering, GPA 4.9/5.0

Feb 2016

- Undergrad in Mechanical Engineering with Economics Conc, GPA 4.9/5.0

Feb 2014

Cambridge University in England, Cambridge-MIT Exchange

Spring 2013

Coursework: Manufacturing, Mechatronics, Controls w/ MATLAB, FGPA's, Stats

Coursera: Machine Learning, Sequence Models, Reinforcement Learning

Experience

Milwaukee Tool

Milwaukee, WI

Machine Learning Team - Principal Engineer / Machine Learning Engineer II

2021-2023

- Internally pitched AI in power tools and started ML team now over a dozen

- Designed AI drill kickback alg for world's first launched AI power tool, sold 100k+

Launched 2022

- Created algorithm and firmware for AI Tek screw mode impact driver

Launched 2023

- Made ML models for predictive maintenance, vision, and real-time embedded applications

- Wrote embedded C firmware, expanded Python-to-C converter tools based on TensorFlow

- Led IP sprints on innovations for power tool batteries, motors, and electronics

- Created processes for data, labeling, and verification, formed ML milestones

- Coordinated teams for AI projects of EE and ML engineers interfacing cross-functionally

- Managed ML direct reports and interns, mentored teams studying ML across org

Front End Innovation Team - Concept Design Engineer I / II / Senior

2016-2021

- Prototyped new drill chuck designs, submitting 100+ unique metal and 3d printed parts

- Generated concepts for new hydraulic tools, vacuums, IOT trackers, and anvil fatigue mitigation

- Integrated sensors on custom logger to drive specs for MX Fuel Compactor

Launched 2023

- Did embedded C motor controls for prototype of M18 Remote Control Search Light

Launched 2021

- Root caused high-ratio gearing issue for prototype, now tool on roadmap

- Shadowed construction workers to gain user empathy and generate new opportunity areas

- Benchmarked competitors, held ideation sessions, and proposed prototype roadmaps

- Evaluated digital tech trends for jobsite layout, presented to Power Tool President

Leadership

MIT Club of Wisconsin Board webmaster, now VP of Communications

2017-Present

MWBA Beeyard Manager with hives at Hunger Task Force, Boys & Girls Club Beekeeper

2017-Present

First Robotics Team 537 - Lead Design Mentor

2017-2019

MIT Gordon Engineering Leadership Program

2013-2015

MIT dorm treasurer, webmaster of six sites

2011-2014

MIT TA for 6 classes - Mechanics, E&M, Electromechanical Robotic Systems

2011-2014

Patents

20+ Pending

US11221611 - Power tool including a machine learning block

Granted 2022

US11084105, US11292109 - Chuck, Multi-size tool bit holder

Granted 2021, 2022

US10981267, US11607790 - Kickback control methods for power tools

Granted 2021, 2023

US11498196 - Attachment for a powered hammer

Granted 2022

Skills and Activities

Python, TensorFlow, Scikit-learn, C, OpenCV, Git/Jira, HTML/CSS - Azure - Excel, PowerBI

SolidWorks, Ansys, GD&T - Waterjet, Laser Cutter, Mill, 3D Printing

Youth Ultimate Coach, Distance Running, Mountain Unicycling, Beekeeping, Trumpet