Jacob Harris

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Education

University of Bath, United Kingdom — *MEng*

September 2014 - July 2018

MEng (Hons) Mechanical Engineering with Manufacturing and Management.

Career

Autodesk , Birmingham— *Technical Consultant*

September 2018 - Present

Autodesk develops software solutions for the engineering, construction and media industry. I create research prototypes for Autodesk's make business. My focus areas are the democratization of manufacturing and Robotics.

SKILLS

- Typescript
- HTML/CSS
- React/Redux
- Golang
- Python
- C++
- UI Design
- Git
- Github Actions
- Docker
- Jenkins
- gRPC
- REST
- GraphQL
- Scrum & JIRA

Interests

- Open source projects
- Blues Guitar
- Games
- Reinforcement Learning

PROJECTS

Project Triton

Worked with a small development team to create a proof of concept system, which used heuristic models of subtractive manufacturing, to evaluate the economic cost of running machining toolpaths. The system was designed to be resilient and scalable, using Uber's cadence for workflow management and hashicorp nomad for service orchestration. The API layer was gRPC based and the frontend was React/Redux.

Fusion Robotics

Created several implementations of a tool for visualizing robotic motion in the web browser. Developed backend inverse kinematics solver in Golang. The platform used Autodesk Forge APIs for storage and authentication. Developed React frontend which used three JS for visualization of the robot motion. Later research projects explored the use of the ROS framework for motion planning and control. Services were deployed to an internal virtual cluster.

HAAS Driver

A project in collaboration with HAAS machine tools. The project aim was to create a more automated workflow for interfacing with HAAS machines from Autodesk Fusion 360. I led development of the React UI and python backend of the solution. I managed the JIRA backlog and built the CI/CD system for the codebase. The solution is currently in alpha and was showcased during the Autodesk University 2020 Design and Manufacturing keynote.