Dusty Argyle | Software Engineer

Salt Lake City, Utah

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Highly motivated and capable engineer with a diverse background skill set related to software, hardware, robotics and cloud infrastructure. Experience leading teams and making technical decisions. Expertise in drones, robots, and computer vision.

Education

Academic Qualifications

- **University of Utah** — **Salt Lake City, Utah**
  B.S. Computer Engineering — *2013–2016*

  Robotics, Algorithms, Artificial Intelligence, Embedded Systems, Technical Writing, Circuit Analysis, Data Structures, Probability & Statistics, Computer Organization and Design, Ordinary/Partial Differential Equations, Calculus, Physics, Linear Algebra, Computer Systems, Mobile Applications, Digital Systems Design, Web Software Architecture, Software Development and Architecture

Employment

- **Sharper Shape** — **SLC (Research Park), Utah**
  US Software Lead — *Feb 2021 – Current*

  Lead team in technical capabilities and advancement. Develop AI/ML algorithms and models to understand and report on customer data. Develop autonomous capture of data and streamline ingestion. Support and plan product development. Develop drone based lidar and camera infrastructure inspections. Create infrastructure for AI/ML model deployment to production environments.

- **Sarcos Robotics** — **SLC (Research Park), Utah**
  Technical Lead / Robotic Software Engineer — *Feb 2017 – Feb 2021*

  Develop and research technologies to advance company robotic algorithms and controls. Give autonomous machines means and smarts to make decisions, gather information, and execute on objectives. Full system simulation setup and design. Lead software architect on the project. Work with camera, lidar, radar, inertial navigation data to enhance robot capabilities. Sensor fusion to combine all information from sensors to provide semi-autonomous user control and to fulfill the program's indicated goal safely. Work on several robotic systems. Design and implement low level motor controllers and high level control algorithms. Build interfaces to control and command the robot. Leverage technologies in computer vision and deep learning to autonomously control the robot. Add cloud and remote control capabilities. Infrastructure support for production and testing. Design and implement APIs for customers to be able to have programmatic control the robot.

- **University of Utah - Application Deployment and Automation Team** — **SLC (Tower 102), Utah**
  Software Engineer — *Oct 2013 – Feb 2017*

  Design, build and demonstrate new technologies to various groups around campus for potential adaptation. Integrat and automat for Java development teams. Design development processes to leverage continuous integration tools. Use configuration management tools to build and deploy sustainable and reliable web services on development and production infrastructures. 3rd party integration. Develope RESTful web services. Practice agile development. Containerize applications.

Notable Projects

- **Custom Drone / Robot Simulation:** *'Python / C++'*

  Gazebo and Unreal Engine physics and scene simulation. Real time functional testing on expensive systems with complicated and stochastic scenarios. Real world to simulation translation of physical robot models. Hardware-in-the-loop (HITL) component-wise testing and evaluation.

- **Real-time object detection:** *'YOLO / C++ / OpenCV / Python / ROS'*

  Confidential government project to detect and track dangerous objects in real-time. The system required feeding real-time image and radar input to a fusion algorithm. The system had to exceed a performance envelope of detection, tracking and controls to fulfill mission critical objectives.

Technical Skills & Classes

Proficient Programming Languages: Python, C++

Previous Experience with Programming Languages: Ruby, Java, Swift, Assembly, Verilog, Groovy, Matlab, Shell, C#

- **Pytorch:** *'Python'*

  Well versed and practiced. Several projects spanning detection, and classification via EfficientNet and various other CNNs. Optical character recognition via MMOCR. Point cloud classification and model training via GNNs.

- **AWS:** *'BOTO3 / Python / Terraform'*

  Proficient in AWS tooling and infrastructure. Include IAM, SSO, Sagemaker, ECR, EKS, RDS, Workspaces, lambda, etc... This includes networking and security expertise, knowledge of configuration management tools like Terraform and CDK's, Kubernetes and kubernetes tools, cloud infrastructure management and design, and roles and regulations surrounding supporting a cloud infrastructure accross the world.

- **Supporting Software Skills:** Linux/Unix (Debian, RHEL, Solaris), Docker, Git, VMWare, OpenCV, Pandas, Bokeh, Matplotlib, Jupyter, ROS, Pytorch, LASTools, PDAL, Gazebo, Airsim, Unreal Engine, Kubernetes, and much much more!

- **General Business Skills:** Excellent presentation skills. Works exceptionally well in a team format and adapts easily to work flows as team and/or projects change. Supported various flavors of the agile product development framework. Experience working as a scrum master and team leader. Experience overseeing transition from waterfall to agile development team. Tried agile enough times to have a favorite flavor.

References

- **Ashley Guinan** *'Software Engineering Manager - Former Colleague'*

  (402) 553-3344

- **Rex Jameson** *'Software Architect - Mentor'*

  (801) 244-5592

- **Daman Bareiss** *'Senior Software Engineer - Former Colleague'*

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