Kyle Patrick **Salitrik**

Software Development Engineer · Electromechanical Engineer

ADDRESS

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Work Experience

Amazon
Seattle, WA, USA

Software Development Engineer Intern
MAY 2018 - JULY 2018

- **Software Development** | Java, Distributed Systems, NoSQL, DynamoDB
  - *(Java)* Developed a scalable tool to allow customers to obtain previously inaccessable billing data utilizing distributed computing
  - *(DynamoDB)* Leveraged consistent hashing algorithms and indexes to ensure proper data distribution to avoid hot keys for big data
  - *(Java)* Provided customers an iterable interface for programmatic access while lazy loading paginated results of large queries
  - *(Java)* Created backfilling tool to populate indexes utilized by the tool in order to provide seamless utilization by current customers

Penn State
University Park, PA, USA

Undergraduate Research Intern
MAY 2017 - PRESENT

- **Programming** | Java, C++, Python, Octave/Matlab, Keras
  - *(Java)* Created algorithm to re-distribute pathfinding endpoints based on suitability of regions near each endpoint
  - *(Python)* Developed scripts to automate path forecasting tests, including options to randomize the endpoint and graph weights
  - *(Octave/Matlab)* Prototyped Machine Learning algorithms
  - *(Keras)* Experimented with Convolutional Neural Networks for extrapolation of position data

Advanced Acoustic Concepts
Uniontown, PA, USA

Electromechanical Engineer
MAR 2015 - JAN 2017

- **Software & Hardware Engineering** | Test Automation, Arduino, Python, BASH
  - *(BASH/Python)* Automated server hardware defect checking and network distributed CPU stress tests that were previously done manually
  - *(Arduino/C)* Designed and programmed test fixtures using bit manipulation to automate testing of ICs and circuit card assemblies
  - *(Arduino/C)* Synchronized Arduinos to process analog signal information in real-time and adjust output based on a feedback loop
- **Mechanical Engineering** | Solidworks
  - *(Solidworks)* Developed adjustable 3-axis vibration fixtures for rackmount servers and various Hammond enclosures
  - *(Solidworks)* Designed modular truss structure for supporting winches on ships with the goal of being hot-swappable for missions
- **Miscellaneous**
  - Mentored interns to bring them up to speed on projects for the company and assigned work based on skill level/familiarity

Projects

Parallax (Link: **Development Videos**)
Classroom & Personal Project

Unreal Engine
MAR 2017

- Parallax is a classroom turned personal project to create a 3-dimensional side scrolling, cover-based shooter. The unique mechanics of the game are that the platforming elements involve depth and the ability for the player to switch between a side-scrolling view that provides better visibility and a low-visibility 3rd person view allowing more accuracy in aiming.

Oculus Drift
HackYSU

C#, Unity
FEB 2017

- OculusDrift was an experiment in audio-visual entrainment employing Unity (C#) and the Oculus Rift. The purpose of the project was to create a relaxing environment by using binaural audio and simulating the user floating through a star field.

Class Projects
PSU

C++, C, C# Python, MatLab, R, LaTeX, Bash
Various

- The repository PSU_Class_Projects in my GitHub (linked in the header) contains a variety of class programming projects
- Notable Projects: Pure Content-Based Music Consumption Estimating Neural Network, pathfinding algorithms in C++ and Python, OpenMP algorithms in C++, MySQL-like DBMS recreation in C

Education

The Pennsylvania State University
University Park, PA, USA

B.S. in Engineering Science
December 2019

- Minors: Engineering Mechanics, Mathematics, Statistics
- Thesis: Effects of Print Orientation, Fill Density and Size on 3D Printed Structures