Kyle Patrick **Salitrik**

PROGRAMMER · ELECTROMECHANICAL ENGINEER

ADDRESS

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Work Experience

The Pennsylvania State University

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
  - *(Java)* Trimmed unnecessary libraries from software deployables
  - *(Octave/Matlab)* Prototyped logistic and linear regression 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)* Saved hundreds of work hours by automating server hardware defect checks and printing status to LCD panels
  - *(Python, BASH)* Automated network distributed CPU stress tests via SSH 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 adaptable 3-axis vibration test fixture for up to 2U, 30-inch servers and frequency range up to 2kHz
  - *(Solidworks)* Created vibration test fixture to accommodate various sizes of Hammond enclosures for low-frequency MIL-SPEC testing
  - *(Solidworks)* Designed modular truss structure for supporting winches on ships with the goal of being hot-swappable for missions
- **Electrical Engineering** | AutoCAD Electrical
  - *(AutoCAD Electrical)* Designed wiring schematics of an I/O chassis for a test station, routing nearly 1800 signals
  - Sped up programming of automatic cable testing by creating standardized pin-out sheets to document cables
  - Vital in working with a parent company DRS and the U.S. Navy to identify replacements for EOL components
- **Miscellaneous**
  - Created and maintained version-controlled environment for documentation, schematics and software for multiple projects
  - 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**)

Personal Project (In progress)

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: 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 & COMPUTATIONAL DATA SCIENCE

Expected: Aug. 2019

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

Professional Memberships

2017 International Game Developers Association, IEEE Computer Society, ACM, ASME