**Alexander J. Flynn**

**Data Scientist**

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**QUALIFICATIONS SUMMARY**

Innovative and results-driven Technical Specialist with robust background in designing and deploying advanced software solutions in significant industries, including aerospace and defense. Demonstrated ability to lead the creation of complicated systems to improve machine capabilities and human decision-making in dynamic environments. Proven capacity to design and refine algorithms for digital signal processing and navigation to achieve novel technological and operational advancements. Capable of transforming complex requirements into actionable software solutions while meeting contractual expectations. Capacity for optimizing computational models for real-time performance in RTOS limitations to foster efficiency.

**CORE COMPETENCIES**

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| * Machine Learning Algorithms * Navigation & Sensor Fusion * Digital Signal Processing * Recommendation Systems | * Predictive Modeling & Analysis * System Architecture Design * Statistical Analysis & Computation * Database Systems | * High-Performance Computing * Statistical Analysis * Cloud Computing * Data Visualization |

**TECHNICAL PROFICIENCIES**

|  |  |
| --- | --- |
| ***Programming Languages*** | Python | C | C++ | C# | Java | Ada | PHP | HTML | JavaScript | R | ARM Assembly | MATLAB |
| ***Data Science & Machine Learning*** | Machine Learning | Artificial Intelligence | Reinforcement Learning | Deep Learning | Neural Networks  TensorFlow | PyTorch | Keras | Pandas | NumPy | PyMC  Bayesian Networks | Monte Carlo Methods | Stochastic Processes | Estimation Theory |
| ***Databases & Data Tools*** | T-SQL | MySQL | Postgres | Apache Spark | Tableau |
| ***Software Development & Deployment*** | Jupyter Notebook | Visual Studio | Git | Jenkins | VersionOne  Docker | Kubernetes | Airflow |
| ***Systems & Platforms*** | AWS | Robotics Operating System (ROS) | Linux Development | Windows Development |
| ***Specialized Domains & Techniques*** | Digital Communications | Digital Signal Processing | Sensor Fusion | Navigation |  Avionics Simulation | Autonomous Systems | Robotics | AGILE |

**WORK EXPERIENCE**

***The Boeing Company, St. Louis, MO***

**Real-Time Software Engineer, Jul 2020 – Present**

Provide comprehensive processing and physics modeling by designing EW software for USAF Training Simulator to improve military training accuracy. Enhance unmanned aircraft operations by creating innovative software for the MQ-25, including new navigation and embedded control algorithms.

* **Engineered advanced C++ software solutions** for digital communication, navigation, sensor fusion, and signal processing models while adhering to Open Mission Systems RTOS constraints and optimizing performance in a simulation environment.
* **Decreased boot-up time from 15 minutes** to under a minute, boosted operational efficiency, and saved the program hundreds of hours monthly by delivering a streamlined Mission Management Software solution for the MQ-25 Trainer.
* **Increased code reliability and performance** by rebuilding testing infrastructure and pioneering robust unit regression tests in C# for USAF Trainer and MQ-25 System Software.
* **Collaborated across multiple teams**, including the Training Systems and MQ-25 projects while contributing to both military training simulators and unmanned aircraft systems.

**Electronic System Design and Analysis Engineer, Jun 2019 – Jul 2020**

Defined a new contractual standard and confirmed stakeholder agreement by authoring and ratifying the key Interface Control Document for USAF Warfighter Digital Communication.

* **Improved Digital Signal Processing**, Communication, and Sensor Fusion for USAF Warfighter systems by architecting vital system software, adhering to Open Mission Systems standards and promoting combat readiness.

**EDUCATION**

**Master of Science in Engineering Data Analytics and Statistics, *Washington University in Saint Louis, Saint Louis, MO, 2023***

**Capstone Project:** [**https://github.com/aflynn0213/MovieRecommenderForDummies**](https://github.com/aflynn0213/MovieRecommenderForDummies) **| GPA: 3.64**

**Relevant Courses: AI/Machine Learning Domain**: Introduction to Machine Learning and Pattern Classification | Artificial Intelligence | Graduate Machine Learning **Applied Mathematics and Statistics Domain:** Random Processes and Kalman Filtering | Probability and Stochastic Processes | Linear Dynamic Systems | Detection/Estimation Theory | Optimization

**Bachelor of Science in Electrical Engineering, *University of Missouri - Columbia, Columbia, MO, 2019*Minor in** **Mathematics & Computer Science | ECE GPA: 3.84**