Algorithms Engineer

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**Summary**

* **4+ years of experience** as an **Algorithms Engineer / Data Scientist** with a **M.Sc. in Engineering.**
* Designed production-grade **ML** and **signal processing algorithms** for real-time environments
* Specializing in **multi-target tracking** using **Kalman filters**, particle filters, and labeled random finite sets**.**
* Deployed models on embedded platforms (**Raspberry Pi CM4**) with efficient **IPC** and **low-latency constraints**
* Built algorithm pipelines using **Python, TensorFlow, PyTorch,** and **PyQt**
* Created and curated **complex** **datasets** for training, evaluation, and simulation of tracking scenarios
* **Led frontend/backend integration**, logging, system config, and **visualization dashboards**
* Mentored new hires and managed **Agile workflows** (GitLab, Jira, CI/CD pipelines)

**Experience**

2024 – Present  **Algorithms Engineer / Data Scientist**, **Sphere-point**

* **Developed real-time Direction of Arrival (DOA) estimation algorithms** using **MUSIC** and a 5-element Uniform Circular Array (UCA), supporting robust signal tracking in dynamic environments.
* **Created** dynamic asset search loops integrating **VFO switching** and signal quality metrics, optimizing detection across multiple emitter targets.
* **Developed PyQt** and **Dash-based frontends** for live **DOA data visualization**, including interactive settings modules and automated display refresh controls.
* **Designed** and **deployed** low-latency signal processing pipelines for embedded hardware(**Raspberry Pi CM4**), with IPC via Unix Domain Sockets for multi-client communication.
* Integrated **logging** **infrastructure, system configuration management,** and frontend/backend synchronization in scalable, field-deployable platforms.
* Initialized and managed the project’s Git repository on **Bitbucket/Jira**; created Jira boards with timelines, milestones, and issue tracking to support **Agile development** across the team.

2021 - 2024 **Algorithm Developer / Researcher / Data Scientist**, **Lockheed Martin ATL**

2023 – 2024  **Algorithm Developer /** **Data Scientist**

* **Developed** a state-of-the-art track-before-detect algorithm supporting a monostatic radar pipeline; achieved low **SINR object tracking** with efficient **FLOP** complexity.
* Created a **non-uniform clutter estimation algorithm** to model complex clutter, including multiple noise jammers.
* Designed a **multitarget reduced state estimator** using labeled random finite sets.
* **Led development** of angle-of-arrival multi-target tracking algorithms to de-interleave PDW streams without mission data reliance.
* Built a target tracking testbed using live **ADS-B data** to generate pseudo-measurements in bearing, elevation, and range.
* **Set up GitLab projects** with readme, pre-commit, setup.py, and multi-stage **CI pipelines.**
* **Onboarded** and **mentored new hires**

2022 – 2023 **Research Engineer** – Machine Learning & Radar Signal Processing

* Created a **Machine learning algorithm analysis pipeline** for a fielded algorithm used in the industry.
* Developed a **multitarget learning library** demonstrating birth, measurement, and survival models.
* **Tested** electronic warfare and RF systems in rugged environments.
* Contributed to **multi-target tracking algorithms**, including **Gaussian Mixture model pruning/merging**, particle resampling, and probability of detection models.
* Created **unit tests** for various functions and functors in the multi-target tracking library.

2021 – 2022 **Research Intern / Algorithm Development,** Lockheed Martin ATL

* **Created target-tracking datasets** with up to 20 targets, simulating constant velocity and turn trajectories.
* Contributed to **multi-target tracking library** by adding detailed docstrings based on theoretical algorithm foundations; Improved library quality by adding static typing support using **Mypy**.

**Education**

2020 - 2022 **M.Sc. Electrical Engineering**, Drexel University, USA

2017 - 2022 **B.Sc. Electrical Engineering**, GPA: 3.90 (94%), Drexel University, USA

**Technical Skills**

**Python, Git** (**Agile** development Standards), **Docker, Kubernetes, MatLab, Latex, C++** (Eigan, Pybind)

**Military Service**

2011 - 2014 Combat Medic, Givati, IDF

**Publications**

Track-Before-Detect Adaptive Birth Using Generic Observation Model Labeled Random Finite Sets," 2023 IEEE International Radar Conference (RADAR), Sydney, Australia, 2023, pp. 1-6.