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Experiences

Factory Simulation Engineer · Hadrian Automation · USA 2026–Present

- Designed & performed simulations to inform factory layouts

Lead Software Engineer · Radiant Industries, Inc. · USA 2025–2026

Senior Software Engineer 2024–2025

- Built nuclear-coupled thermal-hydraulic simulations for >20 safety-critical scenarios
- Guided structural design decisions and operational envelope definition through simulation-driven analyses; conducted verification against >10 success criteria
- Created a real-time reactor simulator for PID tuning & controls verification (SIL), hardware validation (HIL), & operator training (Human in the Loop)
- Increased data availability from <20% to 100% with a Kubernetes-based compute & post-processing pipeline; formalized data release policies under NQA-1 standards
- Led a team of 5; drove architecture & implementation decisions to satisfy concurrent requirements; managed full system design life cycle from concept through deployment

Senior Embedded Software Engineer · WPC Systems Ltd. · Taiwan 2020–2024

- Designed subsystems for aviation industries; applied Hardware in the Loop in the context of Environmental Control Systems (ECS); developed AHRS & INS for drones
- Delivered a stand-alone control system that leads to the creation of Taiwan's first domestically developed Train Wheel Profile Measuring System; achieved a precision level of 1mm
- Brought to market close to >30 IIOT products across 3 series (USB, Wi-Fi, & Ethernet) for data acquisition (DAQ) & industrial control
- Created firmware & cross-platform software driver for in-house products, with a diverse range of >10 features particularly in real-time data acquisition, motion control, bootloader, etc.; worked with ARM Cortex-M3, -M4, & -M7
- Led a firmware team of 3 engineers in developing real-time embedded systems; defined coding & documentation guidelines; built standardized testing & debugging methodologies; designed version control workflow

Research Staff · Royal Observatory of Edinburgh · UK 2017–2020

- Found the Universe smoother than expected using ML, likelihood analysis, & MCMC
- Implemented & executed simulations of physical processes for 1 trillion objects across 10,000 datasets for covariance analysis; delivered a public code
- Applied Variational Inference with CNNs & Active Learning to astrophysics
- Crafted an interactive website visualizing Taiwan's COVID-19 data
- Published 20 papers (>4000 citations); gave >30 professional speeches; reviewed articles

National Civil Service Draftee · Fenglin Veteran Hospital · Taiwan 2016–2017

- Social works, healthcare management, local community development, & software maintenance

PhD-Level Researcher · Alternative and Atomic Energies Commission · France 2013–2016

- Thesis: **Cosmology with weak-lensing peak counts**
- Cut computing time by 2 orders of magnitude by inventing a new **simulation algorithm**
- Accelerated inference with Approximate Bayesian Computation by 80%
- Solved a theoretically intractable problem in cosmology using a stochastic model
- Physical modeling, image processing, statistical inference, model selection, & data interpretation
- Intensive programming in C
- PhD student representative for the Laboratory Council of SAp/AIM

Education

PhD · Astrophysics · Paris-Diderot University · France 2013–2016

MSc · Physics · École Polytechnique · France 2012–2013

French Engineering Degree · École Polytechnique · France 2009–2013

Preparatory Program (CPGE) · Maths & Physics · Lycée Louis le Grand · France 2007–2009

Skills

Programming · C (14 years) · Python (14 years) · Git · Linux · C# · FreeRTOS · LwIP · \LaTeX
· LabVIEW · MicroPython · HTML/CSS · Javascript · C++ · Argo/Kubernetes

Statistics · Inference · Probabilistic Modeling · Bayesian Statistics · General Machine Learning
· Image Processing · Dimension Reduction · Data Visualization

Protocols · I2C · SPI · UART · CAN · TCP · UDP · USB (HID & DFU)

Languages · English · French · Mandarin · Taiwanese