

Adrian Alan Pol

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I am a computer science PhD, with professional work experience in large international scientific institutions and technology companies including data analysis, prototyping and visualization. I am thrilled to take on challenges in computer vision and further sharpening my skills in deep learning.

WORK EXPERIENCE

- CERN** Meyrin, Switzerland
Senior fellow Oct 2016 - Present
 - Designed single-shot **object detection** application for particle identification.
 - Imposed **hardware-oriented network design**, e.g. **compression**, **pruning**, **quantization**.
 - Contributed to `hls4ml` 📄 library, a package accelerating machine learning inference in FPGAs.
 - Modified data quality monitoring paradigm at CMS experiment (**CNN**, **VAE**).
 - Introduced **first** computer vision algorithm in production code, improving sensitivity from 26% to 98%.
 - Collaborated with external companies, i.e. CEVA, Google, Intel and IBM.
- Mendix** (Siemens) Rotterdam, the Netherlands
Software developer (JavaScript, Python, Scala, C#) Mar 2016 - Aug 2016
 - Mendix is a low-code platform that provides tools to build, test, deploy and iterate web and mobile applications.
 - Enhanced stability, usability (reduced loading time by 50%) and security of **mobile applications**, e.g. PIN login.
- CERN** Meyrin, Switzerland
Data analysis and data visualization expert at the CMS experiment Oct 2014 - Nov 2015
 - Designed and deployed a **web-based visualization** for monitoring Monte Carlo simulations 📄.
- IBM** Amsterdam, the Netherlands
Software engineering intern at the Extreme Blue program (Java, JavaScript) Jun 2014 - Sep 2014
 - Analyzed client-specified obstacles to developing software solutions that fulfil operational requirements.
 - Conceptualized and developed a prototype **mobile application** for content **recommendation systems**.

EDUCATION

- University of Paris-Saclay** Orsay, France
Doctor of Philosophy in Computer Science; Thesis: 📄 Oct 2016 - Jun 2020
- Technical University of Denmark** Kongens Lyngby, Denmark
Master of Science in Telecommunications Engineering; GPA 9.2; Thesis: 📄 Sep 2012 - Jan 2016
- National University of Singapore** Singapore
Master of Science in Telecommunications Engineering Aug 2013 - Jan 2014

LANGUAGES, TECHNOLOGIES AND SKILLS

Languages: Python, JavaScript, Java, SQL, Bash **Libraries:** PyTorch, Keras, TensorFlow, pandas, sklearn, d3

SELECTED PUBLICATIONS

- *AI for Particle Physics: Data Quality Monitoring Anomaly Detection*. **International Journal of Modern Physics A**, 2020.
- *Automatic Deep Heterogeneous Quantization of Deep Neural Networks for Ultra Low-area, Low-latency Inference on the Edge at Particle Colliders*. **arXiv:2006.10159**. 2020.
- *Trigger Rate Anomaly Detection with Conditional Variational Autoencoders at the CMS Experiment*. Machine Learning and the Physical Sciences Workshop at the 2019 **Neural Information Processing Systems**.

INTERESTS

In my free time I guide tours at the CMS experiment as an official guide, I co-chair journal club at CERN and conduct quantitative research on financial markets data.