ANDREW WATSON

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PROFILE Experienced software engineer (Scala / Rust / TypeScript) with a Ph.D. in physics, interested in senior or principal-level 100% remote roles. U.S. citizen, Canadian permanent resident.

EXPERIENCE **Senior Software Developer → Staff Engineer** | 2022-07 to present
Improving, Ottawa, Ontario, Canada

I'm a consulting developer for Innovapost on the Next-Gen Track-and-Trace (NGTT) effort to modernize parcel tracking across Canada.

→ pioneered and defined the role of "Staff Engineer" on this client engagement
→ leading Rust upskilling; have taught multiple classes and 100+ students to date
→ single-handedly introduced generators and property-based testing to the engagement
→ built a dependency updating system from scratch, nearly eliminating GitLab CI load
→ redefined core PostCode type to *make invalid states unrepresentable* in the type system
→ using Scala, Akka, protobuf, Kafka, Azure, Prometheus, Cassandra, Postgres daily

Software Development Engineer III | 2020-02 to 2022-04
Workday, Ltd., Dublin, Ireland
→ using Scala, Akka, Kafka, Kubernetes, and related technologies, helped to build and maintain a resilient, idempotent, asynchronous, highly-available job scheduling engine
→ *worked effectively within a legacy codebase* while developing a modern replacement
→ used Gradle, Jira, IntelliJ, LeanKit, Bitbucket, Wavefront, Jenkins, and Confluence daily

Software Developer → Lead Software Developer | 2017-08 to 2020-01
National Institute for Bioprocessing Research and Training (NIBRT), Dublin, Ireland
→ installed and managed in-memory and distributed Apache Hadoop / Spark clusters
→ drew insights from large datasets using bespoke software written in Scala, Java, and R Shiny, managed with Apache Maven and GitHub / GitLab, in an Agile framework

Adjunct Professor | 2015-01 to Present
La Salle University, Philadelphia, PA, USA, and Rowan University, Glassboro, NJ, USA
→ lectured in-person and online physics, astrophysics, and astronomy classes
→ currently teaching online introductory astronomy at Rowan University

EDUCATION **IBAT College, Dublin, Ireland** | 2018-08 to 2019-01
Advanced Diploma in Computer Programming (Advanced Java)

Temple University, Philadelphia, PA, USA | 2012-08 – 2017-05
Doctor of Philosophy, Physics | degree conferred 2017-05
Master of Science, Physics | degree conferred 2014-08

Moravian College, Bethlehem, PA, USA | 2008-08 to 2012-05
Bachelor of Science, Physics & Mathematics with Honors

SELECTED BLOG POSTS & PROJECTS

101 Bash Commands and Tips for Beginners to Experts
366k views // 1.7k reactions // 64 comments [日本語で読む]
a walkthrough of common shell commands, from the simple to the complex and unusual

hello-rust-sdl2-wasm
66 GitHub stars // 82 Hacker News points
a minimal example for compiling a Rust / SDL2 project to WASM and running in the browser

How to Securely Store a Password in Java
85k views // 109 reactions // 21 comments
explains the differences between encryption and hashing and how to hash Strings in Java

rust-mvp
69.1k Reddit views // 155 Reddit upvotes
building an Internet of Things (IoT) minimum viable product (MVP) in Rust over the holidays

What I Learned from Bombing an Amazon Coding Assessment
65k views // 307 reactions // 39 comments
we often learn more from our failures than we do from our successes

SELECTED PUBLICATIONS & PRESENTATIONS

Low-Mass Dark Matter Search with the DarkSide-50 Experiment
The DarkSide Collaboration | 2018-08-23 | Physical Review Letters

DarkSide-20k: A 20 Tonne Two-Phase LAr TPC for Direct Dark Matter Detection...
The DarkSide Collaboration | 2018-03-29 | The European Physical Journal Plus

Transverse Position Reconstruction in a Liquid Argon Time Projection Chamber using Principal Component Analysis and Multi-Dimensional Fitting
Andrew William Watson, Ph.D. Thesis | 2017-08 | ProQuest

Results from the First Use of Low Radioactivity Argon in a Dark Matter Search
The DarkSide Collaboration | 2016-04-08 | Physical Review D

Measurement of Scintillation and Ionization Yield and Scintillation Pulse Shape...
The SCENE Collaboration | 2015-05-26 | Physical Review D

FUN STUFF

Having lived in Philadelphia and Dublin for about five years each, I'm a big fan of whiskey, cheesesteaks, and talking about how great both cities are. Best donuts in Philly: Federal Donuts; best ramen in Dublin: Kokoro. Ask me about the leprechaun museum.

I'm keeping my TypeScript skills sharp by building my website (awwsmm.com) in Next.js.

In the summer of '22, my wife and I took a two-month honeymoon road trip around the U.S. We saw the Grand Canyon, Yosemite, and the world's largest bottle of ketchup.

OTHER ONLINE PRESENCE

https://www.reddit.com/user/_awwsmm
https://stackoverflow.com/users/2925434/awwsmm
https://mas.to/@awwsmm
https://bsky.app/profile/awwsmm.bsky.social
https://news.ycombinator.com/submitted?id=awwsmm

RIGHT TO WORK

As a U.S. Citizen and Canadian Permanent Resident, I have the right to live and work in either country. I am currently based in Ottawa, Ontario, with no desire to relocate.