Dragos Rotaru

Software Engineer, aspiring Researcher

Key Interests: Deep Learning, NeuroSymbolic AI, Compilers, Programming Language Design, Haskell, Dependent Type Systems, Lean, Coq, Idris, Lisp, Formal Code Verification, Program Synthesis, Rust, GPU Programming, Cuda, WebGPU, ML Compilation, Human-AI Symbiosis, Colonizing Mars, e/acc, Networked States, Singularity

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Experience

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I am a Canadian-Romanian software engineer and entrepreneur approaching a decade of experience building all kinds of products and systems. My scope of work is extensive - I started my career designing analog + embedded music hardware and writing C code. Now I mostly do full-stack software engineering with a particular interest in Machine Learning and Programming Language Design. I am a polyglot capable of building systems in a wide range of languages and styles. I love to write experimental software, and my current side project obsessions include replicating machine learning papers on consumer hardware / WebGPU, and building a human-AI pair programming language + IDE in Rust.

Anytype ● Software Engineer
October 2022 - May 2023 ● Berlin (Remote)

developed desktop client and browser extension for peer 2 peer, decentralized, open source, offline-first, encrypted knowledge management tool/everything app with over 160,000 users and over 2k stars on github. Implemented widget system, slick new onboarding, crushed lots of bugs, and promoted team refactoring and documentation efforts to improve code quality. researched state of the art technologies across many domains and advocated for AI / product DSL development. Supported end users in the public forum. Built with TypeScript/NodeJS/React/SCSS/Electron/Go/IPFS/CRDT/Protobuf

career break ➡

I took a year to ski all over North America, get certified as a wilderness first responder, convert a school bus into a camper and develop handy skills. I built a CNC machine to produce a unique modular furniture system. Attempted to build carbon neutral + with upcycled materials. Experimented with all kinds of tools, materials and techniques. Built a high end offgrid electrical and automation system, plumbing, etc. Tried to do biodiesel production using transesterification of waste cooking oil. Contributed to burning man makerspace in Montreal.

Qualio ● Fullstack / Devops Engineer
September 2020 - August 2021 ● San Francisco (Remote)

developed a new customer data migration and onboarding tool to automate the workflow and reduce dependency on the engineering team, scaling up new customer onboarding capabilities by a factor of 100x. transformed spaghetti monolith architecture built over 9 years by layers of contractors to be compatible with new microservice architecture, implementing a CI/CD pipeline to achieve high availability and scaling OKRs. Deployed on AWS stack, using Cloudformation and CDK. onboarding tool built with NodeJS/Typescript/React/RDS/etc.

Huckleberry AI ● Cofounder / CTO (seed stage)
January 2019 - Now ● Waterloo (Hybrid)

Raised ~150k in funding for Canadian prop-tech company, and led the development of 3 products from idea to customers including ping.buzz (b2b Saas), huckleberry.app (b2c) and web extension (b2c). Turned failing outsourced app development project into an in-house success. Built a shoestring budget dev team with contractors + 12 co-op students from Waterloo university. Built systems using serverless, hexagonal, onion, event sourced, functional domain driven design approach. Developed data acquisition strategy, built pipeline and formed strategic

partnerships to gain access to high quality market data. Overcame many challenges, gaps in funding, COVID, product-market fit issues, gained limited traction SO FAR (it ain't over) (<$2000 MRR). Built with NodeJS, TypeScript, PostGres, Redis, AWS, React, React-Native.

Rotaru & Co / RCO Ventures ● Contractor / Consultant
April 2017 - Now ● Waterloo (Remote)

At age 20 I started a successful consulting/contracting firm with up to 4 employees and 30+ clients in a variety of industries. Projects included greenfield web/mobile applications from conception to deployment to LTS, contributions to pre-existing systems on startup/enterprise teams, web development, devops work, data processing and analysis, IT infrastructure management and digitization, and strategic consulting. Some highlights include (not a complete list): healthcare billing app + computer vision system (MDMax), web/mobile app development (Toggl, MowGoSnowGo, ConstructionHub), strategic partnership (Gigit x World Massage Conference), data analysis for cyber crime class action lawsuit (Hexigent Consulting), productized fused dataset of all lawyers in Canada (10+ customers), turnkey IT management and digital transformation for SME (Atlas Property Group, ALR Accounting), audit for startup acquisition (Dormr), Devops in k8s/AWS/DO/GCP/etc (MUTEK, 4eyes vision), Proof of concept blockchain systems (O2 Canada, Cyberium), Strategy consulting startups (3D Stream), Website / Branding / Sales Funnel (many clients).

It would be extremely difficult to produce an exhaustive list of all technologies employed, however they include Python, NodeJS, TypeScript, Bash, SQL, Angular, Vue, React, Electron, PHP, Coffescript, Flow, Clojure, Ruby on Rails, Golang, C, C#, .NET, Netlify, Vercel, AWS, DO, GCP, MongoDB, PostGres, Redis, MySQL, SQLite, RabbitMQ, Wordpress, NextJS, Gatsby, Shopify, PowerBI, Segment, Google Suite, Microsoft 365, Salesforce, Hubspot, Google Analytics, Hotjar, TravisCI, Docker, Websockets, D3js, fp-ts, rxjs, xstate, graphql, apollo, redux, Ethereum, Hyperledger, SCSS, CSS Modules, PostCSS, Styled Components, Tensorflow and OpenCV.

During this time, I was the volunteer organizer at ETHWaterloo and attended various conferences, including NeurIPS, Alibaba, and continued my education in software engineering and computer science by building a variety of personal projects and product ideas (Law Dataset, Organic Review Acquisition, Semantic Tweeting, Scraping Automation, Bluetooth Beacon Contextual Marketing)

Emrys Analytics ● Director of Analytics
September 2016 - March 2017 ● Waterloo (Hybrid)

co-led the development of risk models and underwriting application along with CEO, insuring 84 healthcare institutions in the United States for cyber risk. developed angular/node/electron application and underwriting engine written in Rust/Python. Built ETL pipeline to aggregate and sanitize datasets. Applied models including k-means clustering and monte carlo. co-authored white paper on autonomous vehicle insurance data collection pipeline for Ford Motor Company. mentored by Ned Goodhue, MIT PhD in AI and MBA at Harvard.

Diebold Nixdorf • Software Architecture R&D Internship

May 2016 - August 2016 • London

developed redis IAM middleware architecture for large scale ATM banking infrastructure. built PoCs and conducted experiments, explored emerging tech including blockchain, webrtc, websockets, angular2, http/2, support vector machines for anomalous state detection. supported the highest level of decision making with data by profiling performance of candidate technologies.

DELTAFi (ΔFi) • Founder / Hardware Designer

May 2013 - May 2016 • London

Launched a music hardware company and obtained an entrepreneurship grant at age 17. Built custom analog modular synthesizer, invented an innovative piece of gear way ahead of its time (and my skillset): OPAH-1 (open programmable audio hardware) an hackable analog + digital patch platform running pure data visual programming language patches on an embedded linux system with analog expansion cards. Designed AVR32 and AVR8 based PCBs, etching my own circuit boards as well as having them produced professionally. Wrote bill-of-materials scraper and optimization scripts to help me design my hardware to scale production.

Education

Western University / Comp. Sci. and Mathematics B.Sc.

2014 - 2016, Canada

I am currently doing part-time classes to complete my degree and I intend to pursue research after. I dropped out due to financial issues.

About Me

I am an avid outdoors guy, I absolutely love to ski, highline (slacklining at heights), do yoga, acroyoga, trek long distances (most recently 236km solo in the himalayas), weightlift, climb outdoors and boulder. I gotta use my body!

I spent half my childhood in Romania (EU), and half in Canada, so I am a dual citizen. Since leaving school, I have lived and traveled all over the world - now, I am looking to find a home base. I am willing to relocate for work, and prefer to live in the US, Europe or Asia. I value a high quality of life, good food, access to nature, and lively nightlife like in Berlin/Montreal. I am opposed to the Canadian political class, they are systematically decimating the quality of life for Canadians. Almost all my close friends have left the country, so sadly I don't see it as my home anymore.

I value health above everything else. In terms of work, I prioritize doing meaningful work with kind, awesome people rather than making money. I want to do work that keeps my brain occupied, if the work is not technically challenging enough my productivity suffers.