Runar Buvik

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Senior Software Engineer & CTO | AI · Document Understanding · Geospatial Systems

Hands-on engineer with 20+ years building production systems across machine learning, computer vision, search, and distributed infrastructure. Strong full-stack capability spanning Python, TypeScript/JavaScript, C/C++, cloud architecture (AWS user since 2006), and modern web and mobile development. Founder and technical lead at multiple startups, with deep experience shipping ML-driven products at scale and an early adopter's familiarity with Linux systems administration.

EXPERIENCE

Head of Software, Carbon Crusher *Oct 2022 – Present*

carboncrusher.com · skyroads.ai

Lead engineering for Skyroads, a computer-vision AI tool that helps road owners predict and plan maintenance. Carbon Crusher rebuilds roads using full-depth reclamation, crushing and reusing on-site materials with minimal waste. Carbon Crusher is a Y Combinator alum (W22 batch); backed by the same investor group as Searchdaimon and Bolig.ai.

- Lead a small product team (one frontend developer plus an external designer) while remaining the primary engineer on backend, computer vision, and ~30% of frontend work.
- Designed and built the computer vision pipeline and ML inference system for road condition analysis using YOLO and TensorFlow.
- Designed and shipped a cross-platform iOS and Android app in React Native with Expo, developed with the help of Claude Code.

Tech: Python, Tornado, TypeScript, PostgreSQL/PostGIS, AWS, YOLO, TensorFlow, React, React Native, Expo

CTO, Bolig.ai *Sept 2020 – Present*

bolig.ai

Building a Norwegian real estate intelligence platform with data on 400,000+ homes and over 20 million indoor home photos. Full-time through October 2022; part-time since, alongside Carbon Crusher. Bolig.ai is backed by the same investor group as Searchdaimon and Carbon Crusher.

- Designed and shipped the entire cloud architecture from scratch, including data ingestion from partner systems.
- Built and maintain the backend, web scrapers (including Finn.no), and the integration with the Norwegian Mapping Authority.
- Implemented LoRA-based fine-tuning for image-related machine learning tasks.

Tech: Python, Tornado, TypeScript, PostgreSQL/PostGIS, AWS, Scrapy, SOAP, LoRA, React

CTO, Alva Technologies (now Hjemla.no) *Sept 2017 – Aug 2020*

hjemla.no

Alva developed two ML-based products for Norwegian real estate: an automated valuation model (AVM) used by leading brokers via API and powering hjemla.no for consumers, and Eddie, a system that automates property sales prospectus generation.

- Led a five-engineer development team while remaining hands-on with architecture and core code.

- Took over the AVM from NTNU researchers and graduate students and evolved it into a production system used by major Norwegian real estate brokers.
- Assumed technical ownership of Eddie (originally built by external consultants). The system combines OCR, PDF parsing, and ML to read 150+ pages of property documentation per listing and automatically generate real estate sales prospectuses.
- Designed and deployed the cloud infrastructure on AWS (Elastic Container Service, CodeDeploy, Aurora PostgreSQL).
- Member of the core leadership team, owning technical strategy and pre-sales alongside daily engineering.

Tech: Python, Tornado, PostgreSQL/PostGIS, AWS (ECS, Aurora, CodeDeploy), Jenkins, Angular

Independent Contractor, Apple (Siri) *Nov 2016 – Aug 2017*

- Worked on natural language processing and machine learning initiatives for Siri, on site in Cupertino, CA and Paris, France.

Senior Backend Developer, ABC Startsiden (Telenor subsidiary) *Sept 2015 – Nov 2016*

startsiden.no

- Developed search and backend features as part of a Scrum team for startsiden.no, one of Norway's most-visited websites. Also contributed to abcnyheter.no.

Tech: Perl, MySQL, JavaScript, jQuery

Founder & CTO, Searchdaimon *Jan 2005 – Sept 2015*

en.wikipedia.org/wiki/Searchdaimon

Founded and led development of an open-source enterprise search engine for full-text search. The investor group from Searchdaimon went on to back Bolig.ai and Carbon Crusher.

- Built the core search engine in C and Perl, with related tooling such as Lex, Yacc, and Perl XS.
- Wrote connectors that integrated deeply with Windows security, SharePoint, and MS Exchange using Java, C++, C#, MS SQL, and JavaScript.
- Drove the partnership process to make Searchdaimon one of the first Standard Technology Partners of Amazon Web Services and a Technology Alliance Partner with VMware.

Tech: C, C++, Perl, JavaScript, MySQL, MS SQL, Windows Server; on-premise hosting in Norway and the US

Head of Search, RelinkLabs (part-time) *Feb 2014 – Sept 2014*

RelinkLabs used search and information retrieval techniques to crawl, aggregate, and analyze the social web.

- Built the backend that crawled, scraped, and structured data from social media sources.
- Designed an ML system for cross-platform profile matching that identifies when accounts on different sites belong to the same individual.
- Contributed to overall strategy and technical writing for investor materials.

Tech: Perl, MySQL, JavaScript; hosted on Hetzner

Founder & CEO, Boitho *Jan 2003 – Jan 2005*

Search engine startup.

- Built an internet-scale search engine from scratch that ran across many servers in parallel.

- Designed an innovative distributed crawler that let users donate their spare compute resources and bandwidth.
- Developed bfs, one of the first fully distributed, shared-nothing file systems.

Tech: C, C++, Perl

CONSULTING

Selected clients as an independent consultant: 24SevenOffice (search technology), Elasticsearch (search provider research), GeneSeque (CUDA development), NetClient (server hosting), Pdc Solutions (GIS software), and SlideDog (Windows software development).

EDUCATION

Executive MBA, BI Norwegian Business School *2019 – 2020*

- Program delivered in English, focused on developing and managing digital organizations.
- Included a design-thinking course at the Hasso Plattner Institute (Potsdam) and an entrepreneurship course at UC Berkeley's Haas School of Business (California).

Master of Arts (Cand. Mag) (incomplete), Informatics, Norwegian University of Science and Technology *2001 – 2006*

- Completed most coursework before leaving to found Searchdaimon.

Certificate of Apprenticeship (Fagbrev), Service Electronics, Brundalen & Oppdal Upper Secondary School *1997 – 2000*

- Specialization in computer systems; developed an early interest in robotics and microcontrollers.

OPEN SOURCE

- **Portable-VirtualBox** (vbox.me): primary maintainer of an open-source tool that lets users run any operating system from a USB stick without a separate installation. Written in AutoIt; reached approximately 40,000 downloads per month at peak.

SKILLS

Languages: Python, JavaScript, TypeScript, C, C++, Perl, Delphi/Object Pascal, PHP, AutoIt

Frameworks: Tornado, React, React Native, Expo, Angular

Machine Learning: TensorFlow, YOLO, LoRA, computer vision, NLP, information retrieval

Databases: PostgreSQL (incl. PostGIS), MySQL; some MongoDB, Microsoft SQL Server

Cloud & DevOps: AWS (EC2, ECS, RDS, Aurora, CloudFormation, CodeDeploy; account since 2006), Docker, Jenkins, VMware, DigitalOcean, VirtualBox; some Google Cloud, Xen, and QEMU

Search: Elasticsearch, Searchdaimon, Lucene, SearchBlox, Amazon CloudSearch, Thunderstone

Operating Systems: Linux, macOS, Windows (client and server); some FreeBSD

INTERESTS

Home renovation. Currently renovating a house, performing most non-electrical and non-structural work myself, including drywall, carpentry, masonry, window replacement, insulation, and vapor barriers. Hands-on familiarity with the realities of building maintenance and the workflows that surround it.