

# PAUL W COWAN

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🔗 [github.com/monospacesoftware](https://github.com/monospacesoftware)

## Overview

- Engineering leader with 25+ years experience who elevates teams through technical mentorship.
- Software craftsman practicing clean code, agile methods, and test-driven development principles.
- Skilled communicator who translates complex technical concepts into business value for stakeholders.
- Problem-solver with an entrepreneurial mindset who creates business value through innovative code.

## Professional Experience

### Daupler, Inc

Kansas City, MO (full-time remote)

Principal Software Engineer, Apr 2022 – Present

- **Legacy Cloud Migration** – Led effort to migrate legacy Django monolithic app to AWS for increased performance, interoperability, and uptime commitment demanded by government and municipal entities. Set up code and infrastructure auto-deployment with Terraform and GitLab CI/CD.
- **Modernization** – Architected and led development of system modernization based on serverless Python microservices with numerous AWS facilities. This machine learning backed natural language processing system will enable Daupler to dramatically expand into new markets while providing superior service.
- **Mentorship** – Trained junior engineers in best practices for Git, testing, mocking, CI/CD, deployment, etc.

### Sunbasket, Inc

San Jose, CA (full-time remote)

Director of Enterprise Engineering, Nov 2021 - Apr 2022

Principal Software Engineer, Mar 2019 – Nov 2021

Senior Software Engineer, Jul 2018 – Mar 2019

- **Team Lead** – Managed the “Enterprise Development Team” with two direct reports; responsible for B2B integrations, order processing, packaging and shipping services, and warehouse automation technology.
- **B2B API** – Architected and implemented the technical foundation of Sunbasket’s B2B strategy – a scalable and resilient REST API based on Python, FastAPI, SQLAlchemy, and AWS. Created developer documentation, example libraries, certification test suite, and onboarding SOP.
- **B2B Integrations** – Interfaced with customers from pre-sales through certification to ensure smooth integration with Sunbasket B2B interfaces. Worked with sales, product management, customer service, and operations to plan and coordinate partner rollouts and served as the main technical point of contact.
- **Boxing Algorithm** – Engineered Sunbasket’s industry leading proprietary packaging technology which calculates the optimal ice, insulation, boxing, and shipping solution based on the temperature sensitivity of the food items ordered, destination, time in transit, and forecast temperature on the delivery day. Saved Sunbasket hundreds of thousands of dollars yearly through intelligent cost-aware packaging selection.
- **Order Fulfillment Pipeline** – Redesigned and migrated legacy batch-based order processing technologies to durable asynchronous queues based on Java, Spring Boot, AWS SQS, SNS, and Lambda. This effort resulted in a huge saving in resource time, enabled seamless recovery from failures, and prevented data loss.
- **AWS DevOps** – Regularly participated in on-call rotation and various DevOps duties required to maintain a moderately sized AWS infrastructure. Initiated Sunbasket’s IaC effort by setting up AWS CDK deployments.

## Monospace Software LLC

Owner Engineer, Sep 2010 – Present

Downingtown, PA

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- **Self Employed** – I formed my own company in 2010 as a means to pursue independent projects and contract opportunities
- **KegNet** – A startup I founded to allow home beer Kegerator owners to track and remotely view their beer keg volume, consumption, refrigerator temperature, and socialize with other enthusiasts. I developed both the client hardware (custom designed circuit-board on a Raspberry Pi) and server software. The project is now inactive, but I invite you to read more at the [GitHub project Wiki](#).

## The National Cancer Institute

Senior Software Engineer, Feb 2016 – Jul 2018

via SemanticBits, LLC (government contractor)

Herndon, VA (full-time remote)

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- **Python Microservices** – Coded multiple REST API microservices using Docker, Python, Flask, Swagger, DynamoDB, Redis, Lambda, S3, SQS, Elasticsearch, TraviCI, and GitHub.
- **Mentorship** – Lead design sessions and conducted code reviews. Trained junior developers on Python best practices, API design, Swagger, unit testing, mocking, and proper CI/CD.
- **Legacy JEE Support** – Provided expert development and debugging support during conversion from legacy JEE (JBoss, EJB, JMS, Struts, Spring) architecture to a cloud based Python microservice architecture.
- **Docker Environments** – Initiated, setup, and configured developer Docker environment (both legacy JEE and Python Microservice). Evangelized and trained team on Docker Compose usage and best practices.
- **CI/CD Pipeline** – Worked with cloud engineers as the development lead on a GitHub/TravisCI/AWS based CI/CD Pipeline. Debugged various Docker, Travis, and AWS issues in code and environments.

## USA Technologies, Inc

Senior Software Engineer, Sep 2014 – Feb 2016

Malvern, PA (partial remote)

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- **Transaction Processing Systems** – Made enhancements and bug fixes to real-time credit card processing interfaces with large national acquiring banks using Java, JEE, Jetty, and Oracle SQL.
- **Web Services** – Coded SOAP based web services using Apache Axis and Oracle SQL. Streamlined service development by introducing JAX-WS and Hibernate Validator declarative service descriptors.
- **Continuous Integration** – Improved release quality and general respect for the development team by setting up CI, test coverage, and training developers on proper JUnit and regression testing practices.

## Caucho Technology, Inc

Senior Software Engineer, Oct 2010 – Jun 2014

San Diego, CA (full-time remote)

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- **Resin JEE Application Server** – Added features, fixed bugs, wrote tests, while being careful to maintain performance, thread safety, and JEE 6 spec compatibility.
- **Customer Support** – Interacted with Caucho customers on a regular basis via email, phone, and occasional on-site visits as part of a 3 person on-call rotation.
- **EL 3** – Implemented JEE 7 EL 3 parser for Resin 5.0. This included lambda expressions, stream operations on a collection, and static calls, among others enhancements. Executed JEE 7 TCK compliance testing.
- **JavaOne** – Engineer on-site at Caucho's booth during the 2011 and 2012 JavaOne conferences. Gave a live recorded video interview about Resin for InfoQ online tech magazine.

**NOKIA, NAVTEQ, Traffic.com**  
Chesterbrook, PA

**Senior Architect**, Oct 2009 – Oct 2010  
**Lead Engineer**, Jul 2009 – Oct 2009  
**Senior Engineer**, Oct 2007 – Jul 2009

- **Mentorship** – While working on the “core development” team, I earned a reputation as the go-to guy for technologies used in the back-end; AMQP, Coherence, Spring, JBoss, threading, database pools.
- **AMQP** – Led the effort to move from an EJB service based architecture to a message driven pipelined architecture. Performed evaluations, wrote benchmarks, made recommendations.
- **TEQTalk** – Conducted 1.5 hour long training for approximately 100 R&D employees titled “Heterogeneous High-Speed Asynchronous Messaging” on AMQP, JMS, and synchronous vs asynchronous messaging.
- **User Profile** – Lead engineer for a full cycle development effort, providing development leadership and coding. The project utilized JEE5 stack with JPA, Hibernate, Spring, Oracle, JBoss.

**USA Technologies, Inc**

**Senior Application Developer**, Jul 2003 – Oct 2007

**InternetSeer, Inc**

**Network Applications Specialist**, Oct 2000 – Jul 2003

**Geisinger Health System**

**Technical Analyst**, Feb 1999 – Oct 2000

**Wellspring FV Corporation**

**Programmer**, Sep 1997 – Apr 1999  
**Intern**, Apr 1997 – Sep 1997

## Education and Achievements

- **Bachelor of Science in Computer Science**, Millersville University, Millersville, PA, May 1999.
- Sun Certified Programmer for the Java 2 Platform, Nov 1999.
- Received USA Technologies “**Outstanding Contribution**” award, 2004.
- Member of the Philadelphia Area Java Users' Group.

## Articles and Personal Projects

- [6 Lazy Programming Mistakes and How to Avoid Them](#) – original article for codeburst.io, Feb 2018.
- [Customizable, Sustainable, Delicious](#) – SupplyChain Magazine, 2021. Article about Sunbasket’s complex fulfillment and supply chain technologies which I was the engineer behind much of.
- [KegNet](#) – Allowed home beer kegerator owners to track and remotely view their beer keg volume, consumption, refrigerator temperature, and socialize with other enthusiasts.
- [Pool Graph](#) – An open-source IoT device for monitoring swimming pool temperature and filter pressure.
- [Particle Photon Thermistor Library](#) – an Arduino/C++ library used to read temperature from a thermistor (temperature dependent resistor). Currently at over 49k downloads in the Particle IDE.
- [JBoss Wildfly WebSocket Client Quick Start](#) – Contributed the WebSocket Client tutorial to the official JBoss WildFly quickstart GitHub project. Demonstrates how to use the JSR 356 WebSocket API as a client.
- [EmuLinker](#) – A UDP based game server for retro arcade game system emulators. During 2005-2008 there were as many as 100 servers running worldwide, serving a community of thousands of users.
- [pyimagesort](#) – A Python based utility that sorts and organizes image files using fuzzy matching.