

JOSEPH CLARK

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Veteran software developer with a background in Java, JavaScript, Python, SQL, Rust, C, etc.
My specialty in recent years has been enterprise-scale Java systems, both maintaining and fortifying legacy systems as well as (re)engineering new systems in modern frameworks and architectures (e.g. Spring Boot and Angular).
In my academic career I taught and researched information systems, computer science, data analytics, and statistics.

Education:

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles, CA

December 2012: Doctor of Philosophy (Ph.D), USC Marshall School of Business, Information Systems

May 1999: Bachelor of Arts (BA), USC Annenberg School for Communication, Communication

TULANE UNIVERSITY, New Orleans, LA

May 2004: Master of Business Administration (MBA), Freeman School of Business

Professional Experience in Software Development:

Senior Java Engineer

ADSYNC TECHNOLOGIES / NAVAL SEA LOGISTICS CENTER PORTSMOUTH, Kittery, ME

May 2021 – Current

- Adsync is a contractor providing high-end engineering talent to the U.S. Navy. I work at NavSeaLogCen on an engineering team that develops and maintains PDREP, an extremely high-traffic enterprise system supporting supplier performance information, providing significant cost avoidance and overall savings to DoD and the Navy.
- I work with analysts and DBAs to develop requirements, fix problems, and implement new features in a massive Java enterprise application written in the Struts 2 framework.
- Re-engineered core parts of the legacy system to add new functionality where security was of utmost importance, including a new way of authenticating to the Oracle database and a new single-sign-on feature for DOD users.
- Developed PDREP's first microservice application, a new module using Spring Boot and Angular that has served my teammates as a prototype to follow in a gradual rewrite of the whole system.
- Rewrote a legacy program from scratch, replacing 38,000 lines of code with 2500 lines of clean, well-documented, and testable code to ensure long-term sustainability of the application.

Senior Programmer Analyst

STATE OF MAINE OFFICE OF INFORMATION TECHNOLOGY, Augusta, ME

May 2019 – May 2021

- With one other developer, I maintained and improved the MOSES system, a Java and Oracle application which processes all hunting and fishing licenses, ATV and snowmobile registrations for the State of Maine Department of Inland Fisheries and Wildlife, bringing in about \$30 million in revenue to the State annually.
- Re-engineered the MOSES build process to use Maven and Docker.
- Completely rewrote a module of MOSES in Spring Boot with a Thymeleaf template front-end.
- Helped the Office of IT experiment with GitHub Enterprise, producing a series of training screencasts to teach other developers how to use GitHub Actions for CI/CD.
- As a member of a rapid-development team, worked with other developers to quickly prototype a new application (FSMA) for the Dept. of Agriculture, Conservation, and Forestry using Vue.js.

Analytics Developer

LIE-NIELSEN TOOLWORKS, Warren, ME

August 2016 – January 2021

- As a freelance consultant over a little more than two years, I developed a wide array of data analysis and visualization tools for this famous Maine manufacturer of heirloom-quality woodworking tools. Developed dashboards in Python, using the Flask framework and HTML/CSS/JavaScript templates, in most cases making complex queries of the company's PostgreSQL-based ERP system (Fulfil.io) and presenting that data in interactive tables and data graphics.

Senior Site Integrator, **WALT DISNEY INTERNET GROUP**, Burbank, CA, 2000 – 2001

Web Development Specialist, **MEDIAPOWER, INC**, Portland, ME, 1999 – 2000

Web Site Integrator, **NBC.COM**, Culver City, CA, 1997 – 1999

Academic Appointments:

Adjunct Lecturer: Statistics and Computer Programming
COLLEGIUM SANCTORUM ANGELORUM, Kansas City, MO
August 2024 – Current

Lecturer in Management Information Systems
UNIVERSITY OF MAINE, MAINE BUSINESS SCHOOL, Orono, ME
August 2016 – May 2019

Clinical Assistant Professor, Information Systems
ARIZONA STATE UNIVERSITY, W.P. CAREY SCHOOL OF BUSINESS, Tempe, AZ
August 2013 – May 2016

Visiting Research Associate, **UNIVERSITY OF NEBRASKA OMAHA**, Omaha, NE, *August 2012 – July 2013*
Ph.D. Candidate and Research Assistant, **UNIVERSITY OF SOUTHERN CALIFORNIA**, Los Angeles, CA, *2007 – 2012*
Lecturer, International College, **CHINA AGRICULTURAL UNIVERSITY (中国农业大学)**, Beijing, China, *2006 – 2007*

Other Experience:

Firefighter
FARMINGTON FIRE RESCUE, Farmington, ME
November 2020 – November 2024

Volunteer Mentor
KNIGHTS OF KATAHDIN (FRC Robotics Team #9055), Wilton, ME
Jesus said to the twelve, “Will you also go away?” **68** Simon Peter answered him, “Lord, to whom shall we go? You have the words of eternal life;
2023 – 2025

English Teacher (all ages)
Various **private schools in TAIWAN and SOUTH KOREA**
2001 – 2004

Technologies and Skills:

Software development: 25+ years

Rust: 5 years

Java: 6 years

JavaScript: 25+ years

Python: 13 years

TypeScript: 7 years

HTML: 25+ years

CSS: 25+ years

Other languages: C, Pascal, C++, Perl, PHP, Excel VBA, R

Databases: 25+ years

PostgreSQL: 12 years

Oracle: 6 years

Oracle PL/SQL: 6 years

SQL: 25+ years

Others: Microsoft SQL Server, MySQL, sqlite, MongoDB, sled

Frameworks: Struts 1, Struts 2, Spring Boot, JUnit 5, D3.js, Highcharts, Thymeleaf, Flask, Jinja2

Build tools: Cargo, Maven, Ant

Other tools: **Docker**, GitHub, Bitbucket, Jira, Postman, SonarQube, Jenkins, Angular CLI, npm, Toad

Analytics: Tableau, Excel, LibreOffice Calc, Spyder, pandas, numpy, matplotlib

Buzzword concepts: **DevOps**, REST API, microservices, refactoring, unit testing, integration testing, Agile

Certification: **CompTIA Security+** (from 2019, valid until 2028)

Books Authored:

- (2016) *A Data Engineer's Manual*. [E-book] Leanpub. <https://leanpub.com/data-engineers-manual>
- (in progress) *Relating to the Database: a no-nonsense introduction to relational databases with PostgreSQL*. [E-book] Leanpub. <https://leanpub.com/relating-to-the-database>

Selected Open-source Code:

To examine any of these projects (and more), browse my GitHub profile: <https://github.com/joeclark-phd>.

My public Rust crates can be found on crates.io here: <https://crates.io/users/joeclark-phd>.

- **multimarkov**: (<https://crates.io/crates/multimarkov>)
A Rust crate providing multi-order Markov chain models for procedural generation applications.
- **markov_namegen**: (https://crates.io/crates/markov_namegen) Jesus said to the twelve, "Will you also go away?" **68** Simon Peter answered him, "Lord, to whom shall we go? You have the words of eternal life;
A Rust crate offering tools for generating random text using Markov models.
- **bufferbuffer**: (<https://crates.io/crates/bufferbuffer>)
A Rust implementation of the Double Buffer design pattern.
- **simplechain**: (<https://github.com/joeclark-phd/simplechain>)
An experiment in coding a "generic" blockchain in Rust that can store any kind of serializable data.
- **blockachain**: (<https://github.com/joeclark-phd/blockachain>)
An experiment in coding a simple blockchain in Java.
- **merkletree**: (<https://github.com/joeclark-phd/merkletree>)
A simple Merkle Tree for efficiently verifying that a large data set hasn't been tampered with, in Java.
- **markovmodels**: (<https://github.com/joeclark-phd/markovmodels>)
A Java library providing multi-order Markov chain models for procedural generation applications.
- **random-text-generators**: (<https://github.com/joeclark-phd/random-text-generators>)
A Java library for procedural generation of random text based on Markov models.