JOSEPH CLARK

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Experienced senior software developer with a background in Rust, Java, JavaScript, Python, SQL, 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 arichitectures (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 visualizations.

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 (Interesting?) Experience:

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

Volunteer Mentor
KNIGHTS OF KATAHDIN (FRC Robotics Team #9055), Wilton, ME
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: 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, due to renew in 2025)

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)
  A Rust create 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.