Rob Tompkins

Seasoned Principal Software Engineer Generalist with 15 years of experience

Richmond, VA | chtompki@apache.org | linkedin.com/in/chtompki | (804) 241-3104

SKILLS

Programming Languages: Java (8, 11, 17, 21), Python, Typescript, Javascript, Go, PHP, C++

Libraries & Frameworks: Spring Boot, Hibernate, JPA, Gradle, Apache Maven, Apache Commons, React, Vue, Node, Angular, Flask, Boto3, Dataframes, JupyterLabs, JupyterNotebooks, Angular (1.2 - 1.8), TensorFlow

Database & Storage: SQL, PostgreSQL, MySQL, MongoDB, Redis

DevOps & Cloud: Kubernetes, Terraform, CloudFormation, Ansible, Amazon Web Services/AWS (S3, EC2, RDS, EKS, CloudFront, API Gateway, CodePipeline, CodeBuild, CodeDeploy, DynamoDB, Route 53), Google Cloud Platform, Docker

Other: Machine Learning, Artificial Intelligence Open Source Leader, HTML, CSS, RESTful APIs, TDD, Web3, Git, Nginx, Apache, Enterprise scale systems both cloud and hybrid, Large Language Models, Generative AI

EXPERIENCE

Apache Software Foundation (volunteer)

Member | March 2016 - Present
VP, Jakarta EE Relations | July 2019 - July 2024

Technologies: Java, Maven, Javascript, HTML
- VP Jakarta EE Relations - established an official relationship between the Apache Software Foundation and the Eclipse Foundation for the sharing of resources.
- Apache Commons PMC member - regularly doing updates and releases to the most used Java libraries in Maven Central.
- Published a Paper in IEEE Software Engineering on Open Source Governance
- Fixed commons-fileupload CVE that caused the Experian Databreach
- Fixed numerous CVEs (critical security vulnerabilities)
- Helped with Equifax data breach fix
- Spoke on numerous occasions on topics related to Open Source Governance, Apache Commons, and the introduction of the Commons Text library
- Wrote and released the first versions of Commons Text
- Keeps Apache Commons compatible with Java versions 8, 11, 17, 21, and 23

Vertical Relevance (Consulting at FIS)

Staff Cloud Application Architect | June 2024 - August 2025

Technologies: AWS, Java, Conductor OSS, Harness, EKS, Kubernetes, Gradle, Spring Boot, PostgreSQL, Docker, Kubernetes, TensorFlow, Python

- Created a collection of microservices to service the handling of the ISO 20022 payment protocols.
- Integral part of a team writing a real-time payments engine that became the core of the FIS business model interfacing with TCH and FedNow
- Developed processes and best practices to enable our engineers to efficiently and consistently produce high quality software
- Built all systems related to the storage and maintenance of data for the real-time payments
- Regularly using lambda expressions and multithreading to manage large volumes of calls through the system.

NASA - Fornax Project (contractor)

Sr. Systems Engineer | May 2023 - April 2024

Technologies: EKS, GitLab, Helm, Python, JupyterLab, Grafana, Prometheus, Docker, Kubernetes

- Managed the infrastructure for the Fornax Project
- In charge of project security for Fornax
- Helped centralize all of the astrophysics external satellite data for NASA in AWS for consumption by the general public (authenticated) using JupyterNotebooks
- Installed the first Grafana and Prometheus installation in the NASA EKS environment at Goddard Space Flight Institute
- Created a collection of ephemeral EC2 GitLab runners based on serverless apis

Naborforce

Principal Software Engineer (head of security) | December 2022 - May 2023

Technologies: AWS Control Tower, AWS IAM, GCP, GitHub, Python, Terraform, Help Desk, PHP, MySQL, Docker, Kubernetes, AWS Security Hub, AWS Guard Duty, C++

- Migrated all applications from a single AWS account to a multi-account structure for the purposes of having Root, Production, Dev, Logging, and Security accounts all being separate
- Implemented a zero trust AWS IAM environment
- Created a linkage between GitHub and AWS with infrastructure as code to manage all AWS assets, including IAM and AWS SSO
- Architected the entire network for the company both on-premises and in the cloud
- Led efforts as the Chief DevOps engineer leading the way by creating ephemeral GitHub runners based on a terraform project that spawned serverless apis to interface with the GitHub webhooks.
- Saved the company $100,000 by finding GCloud Credits for telemetry.

Capital One

Sr. Lead Software Engineer | May 2022 - December 2022

Technologies: Java, Gradle, Git, Python, Open Source Office, Docker, Kubernetes

- Managed Capital One's Open Source Projects
- Architected Capital One's Software Bill of Materials for vulnerability remediation.
- In charge of Capital One's Open Source software policies with regards to licensing

Patch

Chief DevOps Engineer | September 2020 - May 2022

Technologies: AWS, GitHub, CircleCi, GCloud, EKS, Mongo DB, Drupal, PHP, C++, Docker, Kubernetes

- Again, Architected a new multi-account AWS strategy for patch to migrate all their applications into using EKS
- Implemented a zero trust AWS IAM environment
- Helped migrate from CircleCI to GitHub actions
- In charge of managing GitHub, CircleCI, AWS, GCloud, EKS, and the Network both on-premises and in the cloud.

Koalafi

Staff Software Engineer (head of network security) | May 2019 - September 2020

Technologies: AWS, Python, Terraform, CloudFormation, Go, EKS, ML, AI, Docker, Kubernetes, AWS Guard Duty, AWS Security Hub, Machine Learning, C++

- Architected a new multi-account AWS strategy for patch to migrate all their applications into using EKS - (Root, Production, Dev, Logging, and Security accounts)
- Implemented a zero trust AWS IAM environment
- Built all the systems using GitLab, and GitLab runners
- Created a BreakGlass login for Production
- Head Security Engineer
- Deployed ML (Gradient Descent) models in Python and C++ for consumption by the business to do credit evaluations.

Capital One

Master Software Engineer | June 2014 - May 2019

Technologies: AWS, Java, Python, Terraform, CloudFormation, Angular, EKS, Docker

- Main CICD engineer for all of Card Online Servicing
- Main CICD engineer for CreditWise
- Migrated CreditWise Application from on premises to the cloud
- Migrated Card Online Servicing application from on premises to the cloud
- Did the Java work to migrate CreditWise from using plain text SSN to using encrypted SSN
- Open Source Leader at Capital One making the most open source contributions across the entire company
- Worked on the internal Java Framework that serviced all of the rest APIs that the company runs

CapTech Consulting

Consultant | August 2010 - May 2014

Technologies: Java, Maven, SQL, Apache Ant, WebSphere, WebLogic, JBoss, Tomcat

- Started Capital One's internal java framework
- Did SQL reporting for BonSecours
- Standardized Virginia Worke's Compensation legal docket system

- Managed Lowes mobile orchestration RESTful API layer

U.S. Freestyle Kayaking Team

Member | 2000, 2001, 2007

- Represented the United States overseas in Freestyle Kayaking
- Placed 6th, 8th, and 8th in World Championships

EDUCATION

University of South Carolina - *M.S. Mathematics*

Columbia, SC | 2007 - 2009

Mathematical Logic, Applied Mathematics, Theoretical Computer Science, Combinatorics on Words, NP-Completeness

Virginia Tech - *B.S. Mathematics*

Blacksburg, VA | 2002 - 2007

Won the undergraduate prize in Mathematics. Combinatorics on Words, Linear Algebra, Logic

Virginia Tech - *B.S. Engineering Science and Mechanics*

Blacksburg, VA | 2002 - 2007

Biomechanics, Applied Physics, Systems Engineering, Engineering Science

Selected Talks

- ApacheCon 2020, Apache RoadShow 2019, "From No Open Source Experience to PMC of Commons and Apache Member," https://www.robtompkins.com/apachecon-2020-from-no-oss-experience-to-pmc-and-member
- All Things Open 2019, Insecurities and Vulnerabilities, https://www.robtompkins.com/ato2019-insecurities-and-vulnerabilities
- ApacheCon 2017, "Introducing Commons Text," https://www.robtompkins.com/apachecon2017-text-presentation

Publications

- Drost-Fromm and R. Tompkins, *"Open Source Community Governance the Apache Way,"* in IEEE Computer, vol. 54 no. 4, pp. 70-75, April 2021, doi: https://www.computer.org/csdl/magazine/co/2021/04/09399942/1sF3Go1prSU
- C. R. Tompkins, *The morphism with unstackable image words*, preprint https://arxiv.org/abs/1006.1273
- C. R. Tompkins, *Latin square Thue-Morse sequences are overlap-free,* Discrete Mathematics and Theoretical Computer Science, 9, 2009, 239-246