Andrew (Drew) Paettie - Full Stack Software Engineer (DevSecOps)

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Skills

Backend Architecture

6 years of experience in green-fielding testable microservices using patterns such as:

- **Domain and Test Driven Design**
- **RESTful APIs**
- **ADRs** (Architecture Decision Records).
- **OpenAPI** specifications (aka Swagger)

Programming Languages

- **Java** (*~6 years*): JUnit, Spring Boot, Micronaut, Android, Tomcat, Gradle, Maven.
- **JavaScript** (*~8 years*): Node, TypeScript, Jest, Cucumber, Yarn, NPM.
- **Python** (*~6 years*): locust.io, scikit-learn, pytest, pypi, FastAPI, SQLAlchemy.
- **C#**, **C, C++** (*<1 year*): Limited academic and review experience.

Frontend Development

8 years of experience with web based GUI development using JavaScript, HTML, and CSS using frameworks like React, Redux, jQuery, Jest, and Angular.

Operational Expertise

- **Containers** (*~7 years*): Docker, Docker Compose, Nomad, ECS, Kubernetes.
- **Infrastructure as Code** (*~7 years*): Terraform, CloudFormation, SAM.
- **Security Testing & Hardening** (*~10 years*): Peer review, Pen testing tools like burp, SAST, DAST
- **Monitoring** (*~7 years*): DataDog, SumoLogic, NewRelic, CloudWatch, Splunk.
- **CI/CD** (*~9 years*): Gitflow, Jenkins, CircleCI.
- **Zero Downtime Deployments** (*~8 years*): Feature flags, canary deployments, on-call.
- **AWS** (*~8 years*): S3, EC2, Lambda, API Gateway, CloudFront, Route53, RDS, EKS.
- **On-Prem Datacenter** (*~4 years*): Ansible, Puppet.
- **Linux** (*~20 years*): Ubuntu and other distributions (use and admin, not kernel development).

Data Persistence

- **SQL** (7 years): Oracle, Postgres, MySQL, SQL Server, H2.
- **NoSQL** (3 years): DynamoDB, Redis, MongoDB.
- **Search** (3 years): Elasticsearch, Lucene.

Messaging Systems

4 years of experience with SQS, RabbitMQ, and Kinesis.

Select Work Experience

Senior Software Engineer at Blue Origin (Oct 2021 - September 2024)

DevSecOps Technical Lead - Lunar DevSecOps Team
- Architected, implemented, and administered Linux-based software development systems authorized for CUI (Controlled Unclassified Information, see also NIST 800-171).
- Developed System Security Plans (SSP), and Plans of Action and Milestone (POAM), automating processes to streamline compliance.
- Established Secure Development Framework (NIST 800-218) aligning development tasks with NIST 800-53 and NASA 7150.2D standards.

- Designed and implemented frameworks for communicating security standards to stakeholders, improving adoption and consistency.
- Led security reviews for peer Merge Requests and OSS dependencies.
- Conducted security assessments for on-prem data centers, supporting hardware-in-the-loop testing for NASA's Artemis V mission.

Site Reliability Engineering (SRE) Lead - Lunar Mission Operations Team

- Designed a Zero Trust Architecture (NIST 800-207) for Lunar Ground Control Systems, focusing primarily on software infrastructure.
- Built a streamlined Linux-based dev environment, offering a "click-button" provisioning system for engineers.
- Defined functional requirements and developed end-user documentation, ensuring the system met SLIs.
- Established CI/CD pipelines and templates, achieving firsts for CI/CD runner management.
- Supported the MK1 Lunar Lander mission (https://www.blueorigin.com/blue-moon/mark-1).

Site Reliability Engineering (SRE) Team

- Stabilized developer tooling (GitLab, Artifactory) through infrastructure optimization.
- Develop an update process which delivered 90% reduction in vulnerability remediation time.
- Reduced CI pipeline execution time, saving about 20,000 engineer hours annually (~$2M).
- Provide consultation daily to other engineers for engineering areas I specialize in
- Drove security compliance for ISO-27001, CMMC, and FIPS, and led key project management and architectural efforts related to standards compliance.
- Developed Kubernetes-based architecture templates, enhancing deployment efficiency.

Senior Software Engineer at Nike (Aug 2019 - Aug 2021)

Global Payment Team - [Initially Contracted through Randstad, converted to FTE]

- Designed multi-region cloud payment services, ensuring high availability and reliability in AWS.
- Conducted chaos engineering tests to improve system resilience in a serverless environment.
- Led initiatives to launch services in China's AWS (aws-cn), ensuring compliance with regional regulations.
- Focused on security hardening, preventing vulnerabilities and securing customer data.
- Built highly scalable APIs in Java and Node.js, implementing layered testing strategies (unit, integration, and behavioral tests).
- Spearheaded safe deployment practices using AWS's canary traffic-shifting for Lambda functions.
- Mentored junior engineers, fostering a culture of pair programming and collaborative learning.

Retail Services Team [Contracted through Randstad]

- Implemented active-active HA strategies, significantly improving service reliability across regions.
- Identified and removed $10k/month in operational overhead through Elasticsearch efficiency improvements.

Education

The University of Texas at Dallas

- Graduated with B.S. Computer Science in December 2015
- Areas of study include: Data Structures, Discrete Math, Algorithm Analysis, ML, AI, Network Security

Additional Employment History and References available upon request.