Andrew Grangaard

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Professional Summary

Senior Software Engineer with over 15 years of experience in scalable systems, cloud infrastructure, and AI development. Proven track record in improving system performance, leading engineering teams, and delivering high-impact projects in high-volume environments leveraging open-source ecosystems.

Skills

- **Programming Languages**: Python, Rust, Perl5, Go, JavaScript, C, Shell
- **Frameworks and Libraries**: Flask, Bottle, SQLAlchemy, NumPy, Pandas, Scikit-learn, React
- **AI and Machine Learning**: LLMs, LangChain, ANN, RNN, CNN, FastAI, PyTorch, TensorFlow, Model Generation
- **Databases**: PostgreSQL, MySQL, Redshift, Elasticsearch, MongoDB, Redis, Riak
- **Cloud Services**: AWS (EC2, S3, IAM, RDS, SQS, Kinesis, Athena, Glue), Docker, Kubernetes (EKS), Terraform
- **DevOps Tools**: Git, Gerrit, Subversion, Chef, Salt, Puppet, Prowler
- **Testing and Development**: Test-Driven Development (TDD), Linux, Apache

Experience

Lemur Labs, Los Angeles, CA
CEO and Chief Engineer | February 2019 – Present

- Provided software consultancy for prototyping ideas and testing market fit.
- Led AI consulting and development with LLMs and LangChain agents for Agents4All.
- Conducted AWS cloud consulting, cleanup, and deployment via Terraform.
- Optimized client's web store response times by 80%, contributing to an increase in sales from $3M to $30M.
- Identified key issues with AWS architecture for WordPress, updated to Aurora with split read and write instances, and streamlined plugins.
- Conducted deep investigations into database issues using WooCommerce at high scale.
- Created improved architecture and development road map.
- Identified and sourced key hires needed for growth; provided on-boarding and continuity.
- Managed the existing offshore operations team, providing oversight and accountability.
- Developed a proof-of-concept shopping funnel to optimize and monetize referral traffic, integrating third-party purchase and delivery systems.

Technologies Used: Python, LangChain, OpenAI, Postgresql, MySQL, Terraform, AWS (EC2, Aurora, S3, EFS, Elasticache), Wordpress.

GogoPix, Los Angeles, CA
Chief Technology Officer | April 2022 – Present
Advisor to CEO | January 2019 – April 2022

GogoPix Vibestream brings music entertainment from artists and record labels to consumers to enjoy on their screens.

- Designed architecture for ingesting and streaming music videos from rights holders.
- Improved and migrated database schema.
- Created a minimum viable product (MVP) for a video clipping service using ffmpeg and conducted competitive analysis of hosted solutions on Mux.com.
- Implemented Digital Data Exchange (DDEX) translation and extraction processes.
- Mentored junior engineers in development, security, and design.
- Provided technical due diligence to customers and investors.
- Developed custom video ingestion solutions for video providers.

Technologies Used: Python, Flask, SQLModel, ffmpeg, Mux, Postgresql, Linux, AWS (EC2, S3, RDS, Route53, ACM, Secure Transfer), Terraform, javascript.

MalachiArts, Los Angeles, CA
Senior Software Engineer | May 2021 – January 2023

Provided development and operations insight for cloud migration projects with clients ranging from startups to Fortune 500 companies.

- **VodyTV**: Designed complete architecture, implementation, and infrastructure of MVP client API and SDK library using AWS API Gateway, Serverless Lambda, S3, DynamoDB, and Terraform.
- **Generate Life Sciences**: Produced a second-generation Kubernetes infrastructure after mapping and documenting existing cloud sprawl, enabling turnkey access for developers through automated Helm charts. Duplicated AWS deployments into multi-account modularized Terraform, improving security and resiliency.
- **Fortune 500 Streaming Media Company**: Developed Python applications for a custom DNS system, updating portal and API to enable teams to safely manage their own customer-facing DNS entries.
- **Fortune 500 Event Ticketing Company**: Embedded in the Kubernetes team; performed rolling upgrades of AWS EKS cluster versions and upgraded clients of deprecated APIs. Wrote a template system to standardize a multi-repo manual configuration, documenting variance and preparing for a meta-configuration file-based automated system.
- Contributed to internal EKS reference platform, including automated testing of AWS security best practices using Prowler, extending it for multi-account organization awareness, and embedding as a Terraform module.
- **Infer.ai**: Developed cloud-native AWS EKS infrastructure to run AI models with high performance and optimized cost for clients.

Technologies Used: Python, Linux, AWS (chalice, API gateway, EC2, S3, Lambda, DynamoDB, CodeCommit, access rules, Roles), terraform, Kubernetes (k8s), ArgoCD, Terraform, Docker.

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Kernel, Los Angeles, CA
Senior Software Engineer | August 2020 – April 2021

- Built initial internal client portal for coordinating models and experimental output data while maintaining confidentiality and security for individual brain scans.
- Utilized Chalice Python framework with Terraform to coordinate AWS services (SQS queues, RDS, S3, access rules).
- Assisted scientists in expanding Python code from proof-of-concept to production-ready applications.

Technologies Used: Python, MongoDB, Linux, AWS (Chalice, S3, Lambda, DynamoDB), pandas, numpy.

ZipRecruiter, Los Angeles, CA
Senior Software Engineer | September 2015 – January 2019

- Improved search times from minutes to under 200ms for largest and highest-paying customers by offloading candidate search from primary RDBMS to Elasticsearch.
- Enhanced acquisition, upsell, and retention of large customers with a new resume search feature over 200 million resumes.
- Imported data from non-searchable raw resumes stored in S3; proposed, specified, built, tested, and deployed the solution leading a team of three.
- Created new operational paths to build machines outside the monolith architecture.
- Managed data ingress and integrity, reducing primary database contention and improving cache performance.
- Migrated monolith event data into a parallel path using S3 and data warehouse solutions, updating producers and consumers incrementally with zero downtime.
- Owned table definitions, S3 data layout, and tooling to automate metadata for Athena and Spark, building a data lake to reduce load on the Redshift data warehouse.

Technologies Used: Python, Perl, Elasticsearch, MySQL, Redshift, Linux, Salt, Terraform, Docker, AWS (EC2, S3, SQS, Kinesis).

AirMedia, Los Angeles, CA
Chief Engineer | July 2014 – July 2015

- First engineering hire, building a video distribution and recommendation platform for premium ad-supported video.
- Developed, deployed, and maintained Python backend services and data reporting hosted in AWS with a MongoDB database.
- Served as technical lead during investor due diligence.
- Onboarded, mentored, and conducted code reviews for new team members.

Technologies Used: Python, bottle, Postgresql, Linux, AWS (EC2, S3, Athena), MongoDB.

Demand Media, Los Angeles, CA
Lead Engineer, SRE, and Ops | August 2011 – July 2014

- Led Project Incite, delivering live contextual recommendations across eHow.com's 3.2 million pages within 8 months, resulting in a 2 million user product.
- Won inaugural company hackathon to capture a million-dollar market via targeted pharmaceutical advertising; championed and launched the product at scale.
- Implemented server and process improvements for eHow, improving PageRank by reducing Time to First Byte (TTFB) for clients and Googlebot.
- Analyzed and upgraded codebase for PHP 5.3 to 5.5 transition.
- Trained engineers on Splunk, Git, Puppet, and Python.

Technologies Used: RabbitMQ, Python, Thrift, Scrapy, Linux, AWS, Redis, Riak, PostgreSQL, Django, Chef, Nagios, Git, Gerrit, Splunk.

Open42 / Demand Media, Los Angeles, CA
Chief Engineer / Lead Engineer | November 2010 – August 2011

- Built a high-speed, high-capacity, cloud-based data warehouse for analyzing click traffic, providing machine learning algorithms for content projection and clustering.
- Served as technical point-of-contact between Open42 and Demand Media.
- Developed data analysis jobs utilizing Hadoop.
- Conducted due diligence of RSSGraffiti code; redesigned it as a work queue to improve database locality.
- Migrated code repositories from SVN to Git; integrated with Redmine for issue tracking.
- Implemented Chef for deployment infrastructure and wrote company recipes.
- Created automated Nagios monitoring for all EC2 cloud hosts.
- Spearheaded adoption of bug tracking, code review in Gerrit, and continuous integration in Jenkins.
- Managed AWS EC2 configuration and lifecycle.
- Developed a Redis-based IP blocking system for legacy products with 7 million entries.

Technologies Used: Perl, Python, Hadoop Streaming, AWS (EC2, S3), PostgreSQL, Linux, Chef, Nagios, Subversion (SVN), Git, Gerrit.

The Rubicon Project, Los Angeles, CA
Senior Software Engineer | October 2008 – September 2010

- Rewrote Perl ad scheduler using a custom rules engine, reducing processing time from 10–30 minutes to under one minute.
- Analyzed and improved network transfer speeds in the scheduling system, enhancing sync speed by 5x.
- Stabilized log aggregation and established the data pipeline as a critical infrastructure component.
- Migrated monthly aggregation rollups into streaming calculations after exceeding database capacity.
- Reverse-engineered and improved financial proration calculations, ensuring consistent sums at each level of roll-up; parallelized calculations using Hadoop.
- Improved SVN repository layout; oversaw merges and implemented unit tests for schedulers.

Technologies Used: Perl, Mysql, Apache ModPerl, Hadoop Streaming, Linux, SVN, Git.

Mediaplex (Conversant), Los Angeles, CA
Software Engineer Manager | August 2006 – September 2008

- Led a team of four engineers enhancing an online advertising system for publishers.
- Selected new features, distributed work, designed code, implemented updates, tested, and provided live support.
- Improved project estimate accuracy and delivered releases on time.

- Revitalized the MOJO team by empowering engineers and improving communication and morale.
- Built strong relationships with the systems team, resulting in improved support.
- Extended Perl advertisement allocator; maintained Apache+mod_perl UI and delivery system.
- Migrated reports and data to an Oracle data warehouse.

Technologies Used: Perl5, DBD, Mysql, Oracle, FreeBSD, Linux

Community Involvement

Conference Speaker
Presented at industry conferences including:

- Southern California Linux Expo / SCaLE
- DevOpsDayLA
- All Things Open
- The Perl Conference (Multiple years)

Organizer and Speaker, LA Perl (2008 – Present)
Organized monthly meetings and presented on topics such as scalable system design and cloud infrastructure. http://la.pm.org

Education

California Institute of Technology, Pasadena, CA

- Completed coursework towards a Bachelor of Science in Electrical Engineering

Certifications

- **Deep Learning Specialization**, Coursera (Offered by DeepLearning.ai), Completed in 2024.
- **Applied Data Science Program: Leveraging AI for Effective Decision Making**, MIT Professional Education, Completed in 2024
- **Mastering LLMs for Developers and Data Scientists**, Maven, Completed in 2024
- **DeepLearn 2024 – IRDTA 11th International School on Deep Learning**, Porto, Portugal, July 2024.

References

Available upon request.