Benjamin Lucchesi
Senior Software Architect/Engineer

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SUMMARY

Benjamin is passionate about solving problems and building software

After nearly 20 years of developing software, Ben's experiences include building line-of-business applications for waste management and construction management companies, video streaming and content management systems used by government bodies nationwide, a financial services platform for the commercial real estate industry, and virtual reality training systems for the mining industry, to name a few. Despite the disparate nature of the industries in which he's worked, the common thread that ties all of Ben's experiences together is his innate curiosity; he's never found an industry that didn't have interesting problems to solve. This speaks directly to Ben's passions: solving problems and building software. As a result, he's developed a comprehensive and deep skillset that allows him to take applications from concept to completion. Whether it's designing and maintaining database schemas, building a continuous integration system, implementing micro services, building single page web apps or mobile apps, or deploying to the cloud, Ben is equally capable of being the founding member of a new team or a new addition to an established team.

SKILLS

Groovy • Java • Typescript • JavaScript / ES6 • C# • C / C++ • Python • SQL • win32 • DirectShow • .net Interop • ASP.net • jQuery • PixiJS • HTML / CSS • Wordpress • PHP • Bootstrap • Material-UI • React • React Native • Redux • MySQL / PostgreSQL • DynamoDB • Grails • Liquibase • Django • Elasticsearch • Spring • Spring Security • Spring Session • Git • Geb • Spock • AWS • Docker • Digital Ocean

EXPERIENCE

ACCURACY SOFTWARE - FOX OPTIMIZATION, INC. | Chief Technology Officer
Oct 2018 - Feb 2019 | Reno, NV

Fox Optimization produces Staff Fox, a SaaS application that employs prescriptive analytics to solve complex schedules. Primary mission was on-shoring development and building/maintaining the deployment environments. Learned a 50KLOC code-base, re-engineered the deployment, and architected/implemented major enhancements. Application stack is Python/Django and Typescript/React. Back-end development tasks included writing Django database migrations, implementing data objects and serializers, and creating REST services with the Django REST Framework. Front-end development tasks included building front-end application logic and user interfaces with Material-UI, React, and Redux, and interfacing with back-end via the fetch API. Also built and maintained the deployment environment with Docker containers in Digital Ocean.

- Upon joining Fox Optimization, an offshore development firm (Poland) was behind schedule and over budget
- Led on-shore development effort to bring project back on schedule
- Worked with business stakeholders and subject matter experts to define, spec, and implement new features
- Result of efforts contributed to Fox Optimization successfully raising $300K in Feb 2019
- Technologies used: Python, Django, React, Redux, Material-UI, Postgres, and Docker

CAPSTAK, INC. | Chief Technology Officer
2016 - 2018 | Reno, NV

Capstak is a commercial real estate service that works with borrowers and brokers to find financing for projects between $2MM and $20MM. With a network of independent brokers, a custom approval workflow, and nationwide marketing, Capstak reduces the time to find and close financing. Responsibilities included working with stakeholders and subject matter experts to design Capstak's online platform, build a development team, and lead implementation of the product. Capstak's stack is Groovy/Grails, React, Tomcat in AWS Elastic Beanstalk, and MySQL in Amazon RDS. Application was architected to support load balancing for fault tolerance and scalability. User sessions are shared between load-balanced app instances by persisting to Redis cluster hosted in AWS Elasticache. Session management configured through Spring Security and Spring Session. Redis also used as a message queue for chat communication between users. Push notifications for chat implemented with web sockets. AWS hosted Elasticsearch used to implement "best match" algorithms and S3 for storing uploaded documents. Used Jenkins to automate builds and AWS deployments when code was checked into git. Database migrations managed with Liquibase. Automated unit, integration, and functional tests with Spock and Geb.

- Upon joining Capstak, an offshore development firm (Israel) was behind schedule and over budget
- After discontinuing the relationship with the offshore firm, we abandoned all work product, and restarted with a new team in Reno, NV
- Technologies used: Groovy, Grails, Geb, Spock, React, Redux, Elasticsearch, Hibernate, MySQL, AWS (RDS, Elastic Beanstalk, DynamoDB, Elasticache w/ Redis, ELB, VPC), Jenkins, Liquibase

GRANICUS, INC. | Chief Software Architect

2004 - 2015 | Reno, NV

Granicus is the leading video streaming and content management system for Government, specializing in legislative workflows and public meetings. As Chief Software Architect, I was responsible for the design and implementation of many of Granicus' flagship products, such as the video encoding and archiving servers, in-meeting workflow applications, and video distribution servers, which includes MinutesMaker, an application used by clerks to manage parliamentary procedures during a public meeting. As the architect and primary developer, version 1 was implemented with .net using Windows Forms and Remoting and later moved to WPF and WCF. Also designed and implemented H264-based video encoding/streaming servers and video editing tools. For streaming servers, developed custom DirectShow scene graph filters to extract closed captions from live video streams. Text stream is timestamped and indexed into a search engine to support searching video by spoken word and jumping to the corresponding point in time. Several thousands of instances of this software were deployed throughout the country, which streamed thousands of hours of video daily through Granicus' central distribution servers and out through CDNs. By the end of my tenure, Granicus had accumulated in excess of 1.2 petabytes of archived video. Developed many other systems including MS Word integration, a custom SSO system (Grails), a cross-tenant search engine (lucence.net), Wowza server plugins (Java), and a distributed deployment management system (.net).

- Joined as first employee; experienced growth to over 120
- Designed and implemented several flagship products: MinutesMaker, Mobile Encoder, the H264 implementation of the media encoding and distribution system
- Granicus was acquired by K1 in 2015 for $50M and acquired again in 2017 by Vista Capital for $120M
- Technologies used: C#, C/C++, C++.net, .net interop, COM, WCF, WPF, win32, DirectShow, FFMpeg, ASP.Net, PHP, MS SQL Server, Groovy, Grails, Javascript, Java, Wowza, Lucene.Net, hibernate.net (any many more)

IQ SYSTEMS | e-Design Manager

2002 - 2004 | Reno, NV

e-Design is a contract software development department within IQ Systems. As the e-Design Manager I was responsible for overseeing, as well as actively participating, in numerous IT projects. Our work ranged from greenfield development to modifications and integration of existing software systems in a variety of industries, including construction management, e-commerce, and waste management. In addition to team management and developing software, I worked in conjunction with outbound sales on business development activities.

EDUCATION

UNIVERSITY OF NEVADA, RENO | Master of Science, Computer Science

2002 | Reno, NV

Master's Thesis: "Parallel Linear Octree Collision Detection Algorithm"

UNIVERSITY OF NEVADA, RENO | Bachelor of Science, Computer Science

1999 | Reno, NV

Senior Project: "Pre-operational Vehicle Safety Inspection for Surface Mine Trucks". An application that uses virtual reality to train mining truck operators on the correct way to inspect a vehicle before operation.

PUBLICATIONS

- Surface mine truck safety training: A vr approach to pre-operational vehicle inspection. *International Conference on Computer Applications in Industry and Engineering*, 1999.

- Surface mine truck safety training: Scenario setup for a vr driving simulator. *APCOM'99 Computer Applications in the Mineral Industries*, 1999.

- A vr approach to surface mine truck safety training. *International Journal of Surface Mining, Reclamation, and the Environment*, 1999.

- A parallel linear octree collision detection algorithm. *International Journal of Computer Applications*, 2014.

LINKS

LinkedIn: **www.linkedin.com/in/benjamin-lucchesi**
Github: **github.com/benlucchesi**
Website: **accuracysoftware.com**

MOBILE APPS

High Power Wind Lab an interactive visualization tool for long range marksmen. Uses ballistic data to calculate effects of wind on projectile. Implemented with React Native and GLView for native rendering. This is an independently published application.

Android: **High Power Wind Lab**
iOS: **High Power Wind Lab**

DESKTOP APPS

Hollands Ultimate Data Card a ballistic calculator for finding where a projectile will impact using the ballistic coefficient of a projectile and environmental factors (air temperature, humidity, barometric pressure, and altitude). Also capable of calculating the BC of a projectile. This is an independently published application.

OPEN SOURCE

Grails Cookie Session Plugin a Grails framework plugin that allows session data to be stored in a browser's cookies. The purpose of the plugin is to simplify deploying Grails applications to load-balanced environments where a centralized session repository is disadvantageous and to simplify authentication between multiple Grails applications hosted under a common domain.

Grails Bugsnag Plugin a Grails framework plugin that automatically reports unhandled application exceptions to the Bugsnag service. Features of the plugin include automatically capturing the current authentication, session data, and stack trace from the exception in the Bugsnag report.