Luke B. Godfrey

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Resume Summary

I am a software engineer with over 10 years in programming. I have a PhD in machine learning, and have more than 6 years of professional experience working at tech startups. In my current role as Senior Software Engineer at Lotic.ai, I collaborate with a cross-disciplinary team to design, code, test, and maintain a large scale, robust platform using a microservice architecture.

I am adept across the tech stack. On a daily basis, I use TypeScript with NodeJS, NestJS, TypeORM, and React, along with supporting technologies including PostgreSQL, Redis, RabbitMQ, Docker, Kubernetes, AWS, and GitHub (including CI/CD pipelines with unit and integration tests in GitHub Actions). I also have experience in C++, Python, Java, Swift, Lua, Tensorflow, NumPy, and more.

In my role as Senior Software Engineer, I work in a cross-disciplinary team, bridging product requirements with engineering concerns to guide platform development. I champion elegant solutions and coding best practices, drive issue resolution and long-term reliability, and mentor junior developers in how they approach design and implementation. I encourage open communication and collaboration both within and across teams. I share the responsibility for balancing feature development, bug fixes, and technical debt in an agile environment.

Education

- Ph.D. in Computer Science, 2018
  Emphasis in machine learning. University of Arkansas, Fayetteville, AR 72758
- M.S. in Computer Science, 2015
  Emphasis in machine learning. University of Arkansas, Fayetteville, AR 72758
- B.S. in Computer Science, 2014
  University of Arkansas, Fayetteville, AR 72758

Employment

Lotic.ai, Senior Software Engineer
2023 – Present

In my current role as Senior Software Engineer at Lotic.ai, I collaborate with a cross-disciplinary team to design, code, test, and maintain a large scale, robust platform using a microservice architecture.

SupplyPike, Software Engineer
2017 – 2023

From 2020 – 2023, I worked as a Software Engineer (Dev Lead) on the Document Explorer team. Working closely with the product owner, I synthesized market research to design and implement the product from scratch using modern frameworks built on NodeJS and React. The product uses a microservice architecture and integrates with third-party data sources to automatically fetch, tag/sort, and serve shipping documents for retailer suppliers. I used machine learning, image processing, and a number of other technologies, and by the time I left, the product had already served millions of shipping documents retrieved from dozens of third-party data sources.

From 2017 – 2020, I primarily worked as a Machine Learning Researcher. In that role, I developed a machine learning pipeline that utilized recurrent neural networks to aggregate data and forecast sales and inventory for consumer goods. I implemented the system using Python, Flask, Tensorflow, Keras, and TypeScript using a microservice architecture. The system is now patented (U.S. Patent US-11334790-B1; see *Patents and Peer-Reviewed Publications* below).

University of Arkansas, Graduate Assistant
2014 – 2018

After earning my B.S. in Computer Science in 2014, I entered graduate school immediately and worked as a research and teaching assistant. As a research assistant, I studied machine learning and produced seven peer-reviewed publications, six of which I was the first author, and theses for my M.S. and Ph.D. (see *Patents and Peer-Reviewed Publications* below). As a teaching assistant, I was responsible for developing curriculum for undergraduate Computer Science courses, including Programming Foundations I, Programming Foundations II (Data Structures and Intro to Algorithms), and Programming Paradigms.

Self-Employed, Freelance Developer

I have always had an interest in computer programming – particularly video games – and at age 15, I developed my first small game and licensed it for the then-immense sum of $500. Since then, I've continued working on hobby- and side-projects ranging from games to apps and websites. I have designed, tested, published, and marketed a few notable solo projects (see *Personal Projects* below).

Patents and Peer-Reviewed Publications

- Godfrey, Luke B. 2022. "**System and method for recurrent neural networks for forecasting of consumer goods' sales and inventory**." U.S. Patent US-11334790-B1.
- Godfrey, Luke B. 2019. "**An Evaluation of Parametric Activation Functions for Deep Learning**." In *Systems, Man and Cybernetics, 2019 IEEE International Conference on*. Bari, Italy: IEEE.
- Godfrey, Luke B. and Michael S. Gashler. 2018. "**Leveraging Product as an Activation Function in Deep Networks**." In *Systems, Man and Cybernetics, 2018 IEEE International Conference on*. Miyazaki, Japan: IEEE.
- Sha, Zhenghui, Luke B. Godfrey, and Michael S. Gashler. 2018. "**Modeling Sequential Design Decisions Using Fine-Grained Empirical Data**." In *Design Science Research 2018: Workshop on Data Driven Design and Learning*. Montreal, Canada.
- Godfrey, Luke B. and Michael S. Gashler. 2018. "**Neural decomposition of time-series data for effective generalization**." *IEEE Transactions on Neural Networks and Learning Systems* 29, no. 7 (2018): 2973-2985. IEEE.
- Godfrey, Luke B. and Michael S. Gashler. 2018. "**A parameterized activation function for learning fuzzy logic operations in deep neural networks**." In *Systems, Man, and Cybernetics (SMC), 2017 IEEE International Conference on*, 740-745. Banff, Canada: IEEE.
- Godfrey, Luke B. and Michael S. Gashler. 2017. "**Neural decomposition of time-series data**." In *Systems, Man, and Cybernetics (SMC), 2017 IEEE International Conference on*, 2796-2801. Banff, Canada: IEEE.
- Godfrey, Luke B. and Michael S. Gashler. 2015. "**A continuum among logarithmic, linear, and exponential functions, and its potential to improve generalization in neural networks**." In *Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K), 2015 7th International Joint Conference on*, 481-486. Lisbon, Portugal: IEEE.

Personal Projects

- **Spurgeon Morning and Evening**. iPhone App (Swift) and Android App (Ionic/Cordova), 2016. Over 5,000 unique users every day as of January 2023. https://spurgeonmae.com/
- **RePete**. Game on Steam and iOS, 2015. Over 25,000 units sold. https://repete.lukesterwebdesign.com/
- **KestersHeatingAndAir.com**. Website for a local HVAC company that I designed and maintain. https://www.kestersheatingandair.com/
- **HopeCBC.org**. Website for a local church that I maintain. https://www.hopecbc.org/