

Caleb Briggs

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Objective

Apply my AI experience and skills as a consultative trainer to level-up business and government decision makers so that AI can be implemented profitably and responsibly across the wide range of business types and government entities.

Notable Achievements

- Began coding at age 10. Began developing AI at age 14. Created Scratch Code Challenge with Discovery Museum, instructed dozens of adult teachers to code in MIT's Scratch interface and ultimately achieved over 1,000 student participants.
- Attended Harvey Mudd College and Stanford University for advanced mathematics while still in high school. Won First Robotics prize for Control Award for computer vision system.
- Created diverse AI projects using Natural Language Processing (NLP), Computer Vision, Genetic Algorithms, and Deep Learning.
- Authored a senior thesis in High School which was commissioned for publication by MIT.

Select Publications, Presentations & Training Labs

Book: The AI Conundrum, MIT Press, 2024 (Preview available upon request.)

Working Paper: AI's new threat landscape: Experiments in hacking and manipulating large language models.

Working Paper: What business executives really need to know about AI.

Kroger AI Executive Training: Performed 4 rounds of training to date, from large format (~100) manager level executives to small group (~12) senior executives. Explained universal approximation, gradient descent and where artificial intelligence diverges from human intelligence.

- Given Kroger is a \$45 Billion revenue company, presented my AI risk framework and addressed issues of AI bias in a way that is appropriate for the largest of corporations.
- Developed hands-on labs in generative AI and led executives through labs so that they recognize strengths and weaknesses of AI and can use it profitably and responsibly. (References available upon request.)

Inc5000, Founder's AI Bootcamp 2023: Trained 300+ Founders and C-level executives of America's fastest growing private companies (per Inc's rankings).

- As most Inc5000 companies are under \$100 million in revenue, training focused on helping executives understand how to achieve quick wins with AI and to do so responsibly, using a simplified version of the risk framework and checklist.

National Security Forum, AI and The Changing Risk Landscape, 2023: Focused half day training for national security government representatives, law enforcement and those interested in the national security implications of AI.

- Government decision makers have a unique responsibility to understand how AI works, and how certain use cases present unique challenges to fairness and equity. Presentation examines challenges of securing LLMs from adversarial attack, bias in facial recognition and approaches to enhance safety through an AI Identity system using blockchain.

Sampling of AI Development Projects

Natural Language Process (NLP) Quora Partners Program, 2020: Created AI generated questions which garnered over half a million views to demonstrate potential of AI to go undetected in community groups.

Computer Vision, First Robotics (Repeat winner of honor to represent State of Nevada in international competition two years running): Created mathematical model and customized code to process visuals and autonomously control the robot accordingly.

Generative AI Audio Advertising: Developed a proof-of-concept system with web interface, GPT-4 API with custom instructions, and integration with four ElevenLabs voices to auto-generate audio ads, showcasing how generative AI can revolutionize advertising.

Kill Bot: Created automated AI targeting and fire decision within simulated counter-terrorist game, CS:GO to explore implications of AI in warfare scenarios. Uses computer vision and decisioning, as well as hardware interfaces to match human behavior to go undetected by anti-bot software. AI increased performance from human level of at bottom 10% to human+AI in top 3%.

Genetic Algorithm for Single Cell Organisms: Developed system with simple goal seeking reward to observe how similar generations of artificial life converge with biological single cell life forms.

News Story Ranker: Developed a data scraping and AI scoring pipeline that automatically consumes news and scores for story relevancy and longevity as it specifically relates to a given business. For any given news story, the AI generates a pitch to the news organization.

Blockchain Development: Created system to log and analyze activity on the Blockchain, with support for recognizing significant or usual trades on a given coin.

Hacking/Manipulating Large Language Models: Demonstrated vulnerabilities and challenges in securing LLM based systems from adversarial attacks by applying prompt injection for autonomous AI agents, cryptographic encoding, and jailbreaking. Successfully cracked Harvard's CS50 AI bot and Khan Academy's Khanmigo, among other experiments to illustrate the asymmetric security risk in open AI systems.

Consultancy and Advisory

MMA Global, marketing tradegroup, AI Advisor
SparkPR AI consultant, AI Prototype developer
Kroger, AI Executive Trainer and Advisor

Education

- Reed College, Portland, Oregon, majoring in Pure Math, GPA 3.7, President's list for exceptional academic achievement, entering Junior year.
- Stanford University, Stanford, California (2020-2021), Real Analysis, Linear Algebra
- Harvey Mudd College, Claremont, California (2019), Single and Multivariable Calculus
- Sage Ridge School, Reno, Nevada (2016-2021), GPA 4.1 Award for Scholarship, distinguished achievement in physics, and student athlete.

Interests:

- Artificial Intelligence, Math, Volleyball, Soccer, Hiking, Skiing