

EDUCATION

Colorado State University 2025-Present
Ph.D. in Computer Science (in progress) | GPA: 3.9/4.0

Colorado State University Earned August 2025
Masters in Computer Science | GPA: 3.9/4.0

Savvy Coders Bootcamp Graduated October 2018
Intensive 10-week program covering HTML, CSS, JavaScript, Git, Node.js

University of Missouri, Saint Louis Graduated May 2015
B.A. in Media Studies | Pierre Laclède Honors College Certificate | GPA: 3.9/4.0 | Summa Cum Laude

PROFESSIONAL EXPERIENCE

FM-Sequential Decision Making & Efficient Goal Driven Behavior Intern (Python, SQL, LLMs) Yorktown Heights, NY
IBM May 2025 – Aug. 2025

- Developed QueryGym, a novel gym environment which allows a single **LLM** agent to iteratively gather contextual information and explore a database's characteristics/data distribution before formulating a query plan.
- Adapted 10 public **Text-to-SQL** benchmarks for the QueryGym environment
- Evaluated the Text-to-SQL accuracy of queries generated by 10 different LLM's using QueryGym
- Improved the Text-to-SQL query generation accuracy of various LLM's by implementing an agentic approach which used multiple agents (**SQL, feedback and repair agents**) and logical query planning to repair incorrect queries.

Graduate Teaching Assistant (Python, Java) Fort Collins, CO
Colorado State University Jan 2023 – Present

- Teaching assistant for CS165 Data Structures and CS150 Culture & Coding offered by the computer science department
- Supported course instructors by tutoring students on course content, grading assignments, and handling course logistics

AI & Planning Research Intern (Python, LLMs) Washington, DC
Naval Research Laboratory June 2024 – Sept. 2024

- Developed an automated **Python** pipeline which uses the **Ollama and Codestral Large Language Models (LLMs)** to convert raw code into valid **Planning Domain Definition Language (PDDL)** actions for AI planning tasks
- Created and tested custom Minecraft-specific PDDL domains on the pipeline, validating its functionality across various scenarios
- Produced a technical report summarizing experimental results from the pipeline, and highlighting the limitations and capabilities of LLMs for tasks related to PDDL generation and beyond

Data Science Intern (Python, SQL) Fort Collins, CO
Mountain Data Group May 2023 – Aug. 2023

- Researched, collected and preprocessed higher education data from various sources for analysis
- Developed and implemented **machine learning algorithms** using **Python** and **SQL** to extract valuable insights from client data
- Communicated findings and insights using data visualizations and presentations to aid in client decision-making

Content Author (CSS, HTML, PHP, JavaScript, Jira, PowerBI) Saint Louis, MO
Anheuser-Busch, Drafiline Creative Tech Team Jan. 2021 – Jan. 2022

- Spearheaded the end-to-end lifecycle and maintenance of custom, client-facing Adobe Experience Manager, Drupal and Hugo websites using **CSS, HTML, PHP and JavaScript** for 50+ national brand managed websites

- Implemented **website analytics dashboards using PowerBI** to monitor and provide statistics on incoming sales, social media outreach, and full web traffic for client websites and team Jira tickets
- Designed **website brand guides using Adobe Photoshop and Illustrator** for client development projects in cooperation with the Draftline Creative Tech team

Web Developer and Content Coordinator (Wordpress, CSS, HTML, Javascript, Adobe Suite)

Saint Louis, MO

Muv Marketing

Nov. 2018 - Dec. 2020

- Designed and coded numerous **Wordpress websites using CSS, HTML, PHP, JavaScript**, various Wordpress plugins (Jetpack, Gravity Forms, Elementor, etc.) and the **Bootstrap framework**
- Produced original social media content (written, digital, video) using **Airtable, Lingo, Hootsuite, and the Adobe Suite** across several networking platforms (Instagram, Facebook, etc.) for clients
- Drafted custom emails in **Emma, Mailchimp, and SendGrid**, and **executed A/B testing** to generate the highest user engagement for various client email marketing campaigns
- Created **marketing dashboards using Google Data Studio** to track sales, social media imprints, and web traffic for client products and websites
- Assembled client **content libraries** with organized brand assets and ecommerce materials for marketing/design projects using **Lingo**
- Facilitated multiple Saint Louis StartUp Grind monthly meetups focused on educating, inspiring, and connecting entrepreneurs

Producer (Final Cut Pro, Adobe Premiere Pro, Book Writing/Editing and Video Production)

Saint Louis, MO

What Drives Winning

Jan. 2016 - Oct. 2018

- Video edited and assisted with filming over **200+ field and live interviews** of elite athletes, college coaches, and thought leaders
- Served as editor for numerous nonfiction books and workbooks pertaining to human performance, character development, and sport
- **Restructured and redesigned pages** of the What Drives Winning website to follow more intuitive **human-computer interaction design principles** and help with internal company initiatives and events
- Constructed a What Drives Winning **video library using Vimeo** to organize all digital content and streamline the video editing and publishing process
- Produced teaser videos using **Final Cut Pro and Adobe Premiere Pro** for the What Drives Winning website, social media accounts, and weekly newsletter
- Curated content for and managed the What Drives Winning Coach's Lab, an online course portal for coaches and athletic directors
- Organized and **executed logistics** for multiple What Drives Winning Conferences that brought together championship-level coaches to discuss what drives their success

EXTRACURRICULAR ACTIVITIES

- Team Member, StartUp Grind (August 2019 - December 2020)
- Video Producer, WashU Mckelvey School of Engineering (August 2014 - May 2015)
- Game Operations Intern, UMSL Athletics (August 2013 - May 2014)
- Team Manager, Division II Basketball at UMSL (August 2013 - May 2014)
- Team Member, Division II Basketball at UMSL (May 2011 - May 2013)
- Board Member, SAAC (Student-Athlete Association Council, 2013)

PUBLICATIONS

- Sikes, K., Keren, S., Sreedharan, S. (pending publication). Reducing Human-AI Goal State Divergence with Environment Design.
- S. Sreedharan, Sikes, K., Blanchard, N., Mason, L., Krishnaswamy, N. & Zarestky, J. (2025). On the Role of Domain Experts in Creating Effective Tutoring Systems. *International Conference on Artificial Intelligence in Education (AIED)*, pp. 61-68.
- Sikes, K., Fine-Morris, M., Sreedharan, S., Smith, L., and Roberts, M. (2025). Creating PDDL Models from Javascript using LLMs: Preliminary Results. In *Workshop on Planning in the Era of LLMs* at AAAI.
- Sikes, K., Fine-Morris, M., Sreedharan, S., and Roberts, M. (2024). Traversing the Linguistic Divide: Aligning Semantically Equivalent Fluents Through Model Refinement. In *Workshop on Knowledge Engineering for Planning and Scheduling* at ICAPS 2024.
- Pickard, W., Sikes, K., Jamil, H., Chaffee, N., Blanchard, N., Kirby, M. & Peterson, C. (2023). Exploring fMRI RDMs: Enhancing Model Robustness Through Neurobiological Data. *Frontiers in Computer Science*.
- Khebour, I., Brutti, R., Dey, I., Dickler, R., Sikes, K., Lai, K., Bradford, M., Cates, B., Hansen, P., Jung, C., Wisniewski, B., Terpstra, C., Hirshfield, L., Puntambekar, S., Blanchard, N., Pustejovsky, J., & Krishnaswamy, N. (2024). When Text and Speech are Not Enough: A Multimodal Dataset of Collaboration in a Situated Task. *Journal of Open Humanities Data*, 10: 7, pp. 1-7.
DOI: <https://doi.org/10.5334/johd.168>

ACADEMIC AWARDS

- The Mark McDonough Memorial Scholarship, UMSL Communications Dept. (Spring 2015)
- Dennis Bohnenkamp Scholarship, PLHC (August 2013)
- UMSL Chancellor's Scholarship (August 11 - May 2015)
- Pierre Laclede Honors College Scholarship (August 2011 - May 2015)

SKILLS & TECHNOLOGIES

Languages: Python, Java, C++, PDDL

Software and Tooling: Git, Dreamweaver, Adobe Experience Manager & Microsoft Visual Code Development Environments, Final Cut Pro, PowerBI, Google Data Studio & the Adobe Suite (Photoshop, Illustrator, Premiere, etc.)

Email Marketing and Web Development: SendGrid, Mailchimp, Emma, Wordpress, Invision, Zeplin