

# Kenny Ballou

Assistant Professor

+1.208.720.1419  
kb@devnulllabs.io  
kennyballou.com  
kennyballou  
kennyballou  
0000-0002-6032-474X

## Education

- 2020 – 2024 **Ph.D. Computing, Computer Science**, *Boise State University*, Boise, Idaho  
Dissertation Advisor: Dr. Elena Sherman  
Dissertation: Leveraging Incrementality of Data-Flow Analysis to Improve Analysis Over Weakly-Relational Abstract Domains
- 2010 – 2014 **B.S., Applied Mathematics**, *Boise State University*, Boise, Idaho  
Minor in Computer Science

## Publications

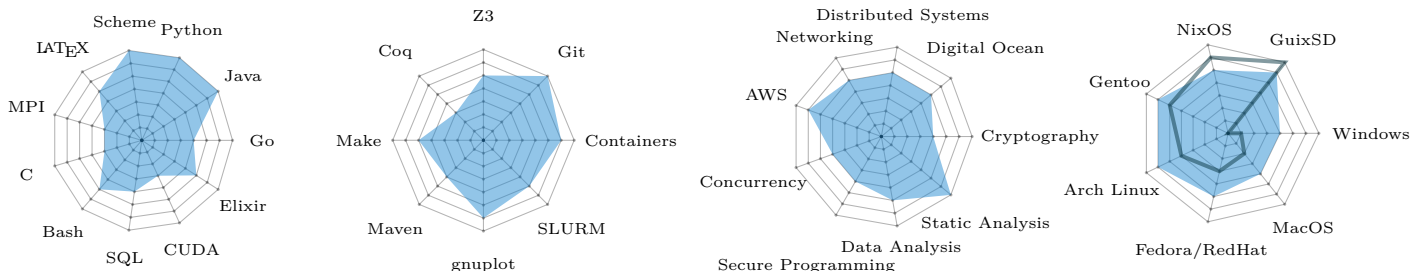
Conference Proceedings

- Oct 2023 ***Minimally Comparing Relational Abstract Domains***, Kenny Ballou and Elena Sherman, In: Automatic Technologies for Verification and Analysis  
DOI: 10.1007/978-3-031-45332-8\_8
- Jul 2023 ***Identifying Minimal Changes in the Zone Abstract Domain***, Kenny Ballou and Elena Sherman, In: Theoretical Aspects of Software Engineering  
DOI: 10.1007/978-3-031-35257-7\_13
- May 2022 ***Incremental Transitive Closure for Zonal Abstract Domain***, Kenny Ballou and Elena Sherman, In: NASA Formal Methods  
DOI: 10.1007/978-3-031-06773-0\_43

Books and Chapters

- Jan 2016 ***Learning Elixir***, Kenny Ballou

## Technical Skills



## Experience

- Aug 2024 – **Assistant Professor of Computer Science and Software Engineering**, *California State University, San Marcos*, San Marcos, California  
Present
- Aug 2020 – **Graduate Research Assistant**, *Boise State University*, Boise, Idaho  
Aug 2024 Research Focus: Numerical Abstract Interpretation, Static Program Analysis, Software Engineering

Industry Employment

- Mar 2017 – **Site Reliability Engineer**, *HomeCU*, Boise, Idaho  
Aug 2020 Developed and maintained Amazon Web Services (AWS) infrastructure and container environments using infrastructure as code.
- Jan 2016 – **Software Engineer**, *zData*, Boise, Idaho  
Jan 2017 Developed and maintained a data platform for managed services.

- Jul 2015 – **Software Engineer**, *Clearwater Analytics*, Boise, Idaho  
Dec 2015 Developed and maintained a suite of web applications for Asset Managers.  
Jan 2015 – **Data Solution Architect**, *Alpine Data Labs*, Remote  
Jul 2015 Developed and maintained an SDK for remote installations and diagnostics. Provided technical support to sales and account managers.

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## Talks

- March 2024 **Leveraging Incrementality of DFA to Reason About Weakly-Relational Abstract Domains**, *Computing Colloquium*, Boise State University  
Oct 2023 **Minimally Comparing Relational Abstract Domains**, *Automated Technologies for Verification and Analysis*, Singapore  
Jul 2023 **Identifying Minimal Changes in the Zone Abstract Domain**, *Theoretical Aspects of Software Engineering*, Bristol, UK  
May 2022 **Incremental Transitive Closure for Zonal Abstract Domain**, *NASA Formal Methods*, Pasadena, CA  
Mar 2017 **Learning Git in Reverse**, *Boise Code Camp*, Boise, ID  
**Elixir/Erlang Hot Loading Code**, *Boise Code Camp*, Boise, ID  
Mar 2016 **Learning Git in Reverse**, *Boise Code Camp*, Boise, ID  
**Functional Programming with Elixir**, *Boise Code Camp*, Boise, ID

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## Teaching

- Spring 2025 **Programming Languages**, California State University San Marcos  
Spring 2025 **Game Programming**, California State University San Marcos  
Spring 2025 **Software Architecture**, California State University San Marcos  
Fall 2024 **Data Structures and Algorithms**, California State University San Marcos  
Fall 2024 **Introduction to Software Engineering**, California State University San Marcos  
Spring 2023 **Theory of Computation**, *Guest Lecture*, Boise State University  
Introduction to Finite Automata  
Spring 2022 **Theory of Computation**, *Guest Lecture*, Boise State University  
Regular Languages and Operations of DFA  
Fall 2022 **Static Program Analysis**, *Guest Lecture*, Boise State University  
Introduction to Numerical Abstract Domains  
Fall 2013 **Discrete Mathematics**, *Lab Assistant*, Boise State University  
Spring 2013 **Android App Development**, *Teaching Assistant*, Boise State University  
Gave guest lecture on Git  
Fall 2011 **Computer Science I and II**, *Lab Assistant*, Boise State University

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## Professional Service

- CSCSU 2025 Programm Committee Member  
PLDI 2022 Student Volunteer Session Chair

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## Honors and Awards

- 2025 CSTEM Faculty/Student Collaboration Award - Engineering  
2013 Student Research Initiative Fellowship Recipient