KEVIN A. ANGSTADT

Assistant Professor of Computer Science
Math, Computer Science & Statistics • St. Lawrence University
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ACADEMIC INTERESTS

I have a passion for teaching and mentoring undergraduate students and am particularly interested in developing new teaching practices that broaden the participation of—and improve the climate for—underrepresented demographics in Computer Science.

My research spans the intersection of computer architecture, software engineering, and programming languages. I focus on improving programming support for emerging hardware technologies, including both the development of new programming models as well as automated techniques for adapting existing software.

ACADEMIC APPOINTMENTS

2022–present   **Assistant Professor of Computer Science**
St. Lawrence University (Canton, NY)

2020–2022   **Visiting Assistant Professor of Computer Science**
St. Lawrence University (Canton, NY)

EDUCATION

2020   **Ph.D., Computer Science and Engineering**
University of Michigan (Ann Arbor, MI)
Thesis: Improving Programming Support for Hardware Accelerators Through Automata Processing Abstractions
Advisor: Westley Weimer
Committee: Reetuparna Das, Jean-Baptiste Jeannin, Kevin Skadron (UVA), Westley Weimer (chair)

2016   **Master's Degree in Computer Science**
University of Virginia (Charlottesville, VA)
Thesis: RAPID Programming of Pattern-Recognition Processors
Advisors: Westley Weimer, Kevin Skadron
Committee: Andrew Grimshaw, Baishakhi Ray, Gabriel Robins (chair), Kevin Skadron, Westley Weimer

2014   **B.S., Computer Science, Mathematics, and German Studies**, Summa Cum Laude
St. Lawrence University (Canton, NY)
Thesis: Accelerating Database Joins Using a General Purpose GPU
Advisors: Edwin Harcourt, Daniel Look, Ingrid Stipa

TEACHING EXPERIENCE

Twelve semesters experience as primary instructor for Computer Science, facilitated learning in small (8-15 students), medium (30-50 students), and large (70-100+ students) classrooms

COURSES TAUGHT (PRIMARY INSTRUCTOR)

CS 140
(SLU)

Intro to Computer Programming introductory course introducing students to programming in a high-level language

TEACHING ACTIVITIES

Adapted and developed lecture materials; created all assignmentment (both short homeworks and projects); designed, proctored, and graded exams; provided office hours and student meetings

SEMESTERS TAUGHT

- **Fall 2022**: 50 students enrolled
- **Spring 2022**: 49 students enrolled, Mean Evaluation: 6.6/7 (Sec. 01), 6.7/7 (Sec. 03), University Average: 6.2/7
- **Fall 2021**: 24 students enrolled, Mean Evaluation: 6.8/7, University Average: 6.1/7
- **Summer 2021**: 18 Students enrolled, Mean Evaluation: 6.7/7, University Average: 6.2/7 (Adapted materials for hybrid in-person and online version in response to the COVID-19 pandemic)
- **Spring 2021**: 29 students enrolled, Mean Evaluation: 6.8/7, University Average: 6.1/7
- **Fall 2020**: 25 students enrolled, Mean Evaluation: 6.1/7, University Average: 5.9/7 (Developed online version in response to the COVID-19 pandemic)

CS 256
(SLU)

Data Structures intermediate-level required course focusing on data representation and asymptotic complexity

TEACHING ACTIVITIES

Adapted and developed lecture materials; created all assignmentment (both short homeworks and projects); configured and upgraded automated grading server; designed, proctored, and graded exams; provided office hours and student meetings

SEMESTERS TAUGHT

- **Fall 2022**: 36 students enrolled
- **Fall 2021**: 16 students enrolled, Mean Evaluation: 6.8/7, University Average: 6.1/7
- **Fall 2020**: 22 students enrolled, Mean Evaluation: 6.4/7, University Average: 5.9/7 (Developed online version in response to the COVID-19 pandemic)

CS 332
(SLU)

Web Programming upper-level elective introducing students to modern web development langauges and practices

TEACHING ACTIVITIES

Adapted and developed lecture materials; created all assignmentment (both short homeworks and projects); designed automated grading server; designed, proctored, and graded exams; provided office hours and student meetings

SEMESTERS TAUGHT

- **Fall 2021**: 13 students enrolled, Mean Evaluation: 6.7/7, University Average: 6.1/7

CS 340
(SLU)

Software Engineering upper-level elective focusing on soft skills, processes, and ethics for industrial software development

TEACHING ACTIVITIES

Adapted and developed lecture materials; created all assignmentment (both short homeworks and projects); designed automated grading server; organized guest speakers from industry; provided office hours and student meetings

SEMESTERS TAUGHT

- **Summer 2021**: 4 students enrolled, 1 student auditing, Mean Evaluation: 7/7, University Average: 6.2/7
(Developed hybrid [in-person and online] version in response to the COVID-19 pandemic)

CS 364
(SLU)

Programming Languages upper-level elective focusing on functional programming and the implementation of an interpreter for an object-oriented programming language

TEACHING ACTIVITIES

Adapted and developed lecture materials; created all assignmentment (both short homeworks and projects); configured and upgraded automated grading server; designed, proctored, and graded exams; provided office hours and student meetings

SEMESTERS TAUGHT

- **Spring 2022**: 11 students enrolled, Mean Evaluation: 6.8/7, University Average: 6.2/7
(Designed new programming language for students to implement: https://snail-language.github.io)

- **Spring 2021**: 16 students enrolled, Mean Evaluation: 6.6/7, University Average: 6.1/7
(Developed hybrid [in-person and online] version in response to the COVID-19 pandemic)

EECS 281
(U-M)

Data Structures and Algorithms intermediate-level required course focusing on data representation, asymptotic complexity, and algorithmic design

TEACHING ACTIVITIES

Taught 1 of 5 lecture sections; co-managed team of graduate and undergraduate teaching assistants (24–27); adapted and edited lecture material; changed topic order for all lecture sections to coincide with projects; provided office hours and student meetings for all students; designed and oversaw grading for two exams for all lecture sections; redesigned exam format for improved exam-day logistics and automated grading

SEMESTERS TAUGHT

- **Winter 2019**: 638 students enrolled (48 enrolled in Angstadt's section), Angstadt Median Evaluation: 4.8/5, Engineering Median: 4.3/5

- **Winter 2018**: 685 students enrolled (79 enrolled in Angstadt's section), Angstadt Median Evaluation: 4.69/5, Engineering Median: 4.5/5

EECS 398
(U-M)

Practical Skills for Teaching Computing 1 credit-hour, upper-level elective seminar introducing teaching assistants to skills needed to be successful as well as the basics of curriculum design

TEACHING ACTIVITIES

Developed (from scratch) all lecture topics, assignments, and assessments; met with department and college administrators to discuss course role, content, and sustainability

SEMESTERS TAUGHT

- **Fall 2019 (pilot)**: 9 students enrolled, Median Evaluation: 5.0/5, Engineering Median: 4.7/5

CS 4610
(UVA)

Programming Languages upper-level elective focusing on functional programming and the implementation of an interpreter for an object-oriented programming language

TEACHING ACTIVITIES

Developed and adapted lectures, five homework assignments, and three exams; managed team of undergraduate teaching assistants (3); modernized autograder submission process

SEMESTERS TAUGHT

- **Spring 2017**: 31 students enrolled, Mean Evaluation: 4.80/5 (0.45 std. dev.), Engineering Average: 4.35/5 (0.90 std. dev.)

CS 4640
(UVA)

Programming Languages for Web Applications condensed summer course introducing students to 3-tier architectures, client-server design, and associated languages and features

TEACHING ACTIVITIES

Developed (from scratch) lectures, four homework assignments, two exams, and final project; managed graduate teaching assistant

SEMESTERS TAUGHT

- **Summer 2017**: 9 students enrolled, Mean Evaluation: 4.80/5 (0.45 std. dev.), Engineering Average: 4.35/5 (0.90 std. dev.)

- **Summer 2016**: 15 students enrolled, Mean Evaluation: 4.83/5 (0.41 std. dev.), Engineering Average: 4.36/5 (0.84 std. dev.)

GUEST LECTURES

Winter 2018
(U-M)

EECS 483 (Compiler Construction), Lexical Analysis Foundations and Lexical Analyzer Generators (1.5 hour lecture, 59 students enrolled)

Fall 2017
(U-M)

EECS 590 (Advanced Programming Languages), Designing and Presenting Programming Languages in the Broader Research Community (1.5 hour lecture, 19 students enrolled)

Spring 2016
(UVA)

CS 4501-005 (Compilers Practicum), Data-Flow Analysis (1 hour lecture, 16 students enrolled)

Spring 2016
(UVA)

CS 6354 (Computer Architecture), Accelerating Pattern Searches with Hardware (1.25 hour lecture, 29 students enrolled, supplied question for final exam)

Fall 2015
(UVA)

CS 6610 (Programming Languages), Designing and Presenting Programming Languages in the Broader Research Community (1.25 hour lecture, 16 students enrolled)

PROFESSIONAL DEVELOPMENT

2017–2020

Graduate Teaching Certificate, Center for Research on Learning and Teaching, University of Michigan
Certificate program for graduate students focusing on the development of teaching skills at the college level. Includes professional development workshops, practical teaching experience, and mentorship.

2016–2017

Tomorrow's Professor Today, Center for Teaching Excellence, University of Virginia
Professional development program designed to facilitate the transition from student to professional, with a focus on teaching preparedness. (Partial completion; moved to Michigan)

OTHER EXPERIENCE

TEACHING ASSISTANT (ST. LAWRENCE UNIVERSITY)

2013–2014

German 103/104 (Lab for Intermediate German)

2011–2014

German 101/102 (Lab for Elementary German)

Taught a total of 11 sections. Responsibilities included: assisting in course planning, developing curriculum from scratch for and teaching an additional two contact hours per week of language instruction, facilitating exam review sessions, assigning and grading homework exercises. Language instruction included grammar constructs (via lectures, worked examples, and written exercises), vocabulary (via in-class conversations, skits, and games), and culture (via films, discussion, and German mass media). Class sizes ranged from 5 to 20 students.

PUBLICATIONS

19 publications : 9 conference (including ASPLOS, HPCA, ISCA, ITiCSE, MICRO), 3 journal (including CAL, TPDS), 4 workshop (including APR; CCSW, DSN-W, WAX), 1 invited (including CODES), 2 technical reports and patents; 6 publications (including submissions) with undergraduate co-authors

† Undergraduate Co-author

CONFERENCE PROCEEDINGS (9 PEER-REVIEWED)

PROMISE '22 Hammad Ahmad, Colton Holoday, Ian Bertram†, **Kevin Angstadt**, Zohreh Sharafi, and Westley Weimer. LOGI: An Empirical Model of Heat-Induced Disk Drive Data Loss and its Implications for Data Recovery. In *Proceedings of the 18th International Conference on Predictive Models and Data Analytics in Software Engineering*, Singapore, 2022. ACM, to appear. (56% acceptance rate)

ISSRE '22 Kevin Leach, Christopher S. Timperley, **Kevin Angstadt**, Anh Nguyen-Tuong, Jason Hiser, Aaron Paulos, Partha Pal, Patrick Hurley, Carl Thomas, Jack W. Davidson, Stephanie Forrest, Claire Le Goues, and Westley Weimer. A Framework for Trusted and Resilient Autonomous Vehicles. In *Proceedings of the 33rd IEEE International Symposium on Software Reliability Engineering*, Charlotte, North Carolina, 20222. IEEE, to appear. (29% acceptance rate)

ITiCSE '21 Fee Christoph†, Westley Weimer, and **Kevin Angstadt**. The Early Bird Gets the Worm: Major Retention in CS3. In *Proceedings of the 2021 ACM Conference on Innovation and Technology in Computer Science Education*, Virtual Event, Germany, 2021. ACM. (31% acceptance rate)
🌐 https://doi.org/10.1145/3430665.3456335

ASPLOS '20 **Kevin Angstadt**, Jean-Baptiste Jeannin, and Westley Weimer. Accelerating Legacy String Kernels via Bounded Automata Learning. In *Proceedings of the 25th International Conference on Architectural Support for Programming Languages and Operating Systems*, Lausanne, Switzerland, 2020. ACM. (18% acceptance rate)
🌐 https://doi.org/10.1145/3373376.3378503

ASPLOS '19 Matthew Casias†, **Kevin Angstadt**, Tommy Tracy II, Kevin Skadron, and Westley Weimer. Debugging Support for Pattern-Matching Languages and Accelerators. In *Proceedings of the 24th International Conference on Architectural Support for Programming Languages and Operating Systems*, Providence, Rhode Island, 2019. ACM. (21% acceptance rate)
🌐 https://doi.org/10.1145/3297858.3304066

MICRO 51 **Kevin Angstadt**, Arun Subramaniyan, Elaheh Sadredini, Reza Rahimi, Kevin Skadron, Westley Weimer, and Reetuparna Das. ASPEN: A Scalable In-SRAM Architecture for Pushdown Automata. In *Proceedings of the 51st Annual IEEE/ACM International Symposium on Microarchitecture*, Fukuoka, Japan. 2018. IEEE. (21% acceptance rate)
🌐 https://doi.org/10.1109/MICRO.2018.00079

HPCA '18 Jack Wadden, **Kevin Angstadt**, and Kevin Skadron. Characterizing and Mitigating Output Reporting Bottlenecks in Spatial Automata Processing Architectures. In *Proceedings of the 24th IEEE International Symposium on High-Performance Computer Architecture*, Vienna, Austria, 2018. IEEE. (21% acceptance rate)
🌐 https://doi.org/10.1109/HPCA.2018.00069

ASPLOS '16 **Kevin Angstadt**, Westley Weimer, and Kevin Skadron. RAPID Programming of Pattern-Recognition Processors. In *Proceedings of the 21st International Conference on Architectural Support for Programming Languages and Operating Systems*, Atlanta, Georgia, 2016. ACM. (22% acceptance rate)
🌐 https://doi.org/10.1145/2872362.2872393

HPC '15   **Kevin Angstadt** and Ed Harcourt. A Virtual Machine Model for Accelerating Relational Database Joins using a General Purpose GPU. In *Proceedings of the High Performance Computing Symposium*, Alexandria, VA, 2015. Society for Computer Simulation International.
🌐 https://dl.acm.org/citation.cfm?id=2872615

JOURNAL MANUSCRIPTS (3 PEER-REVIEWED)

MICRO '22   **Kevin Angstadt**, Tommy Tracy II, Kevin Skadron, Jean-Baptiste Jeannin, and Westley Weimer. Synthesizing Legacy String Code for FPGAs Using Bounded Automata Learning. In *IEEE MICRO*, vol. 42, no.5, pp. 70-77, 1 Sept.-Oct. 2022. IEEE. (2.821 journal impact factor)
🌐 https://doi.org/10.1109/MM.2022.3178037

TPDS '19   **Kevin Angstadt**, Jack Wadden, Westley Weimer, and Kevin Skadron. Portable Programming with RAPID. In *Transactions on Parallel and Distributed Systems*, vol. 30, no. 4, pp. 939-952, 1 April 2019. IEEE. (4.181 journal impact factor)
🌐 https://doi.org/10.1109/TPDS.2018.2869736

CAL '18   **Kevin Angstadt**, Jack Wadden, Vinh Dang, Ted Xie, Dan Kramp[†], Westley Weimer, Mircea Stan, and Kevin Skadron. MNCaRT: An Open-Source, Multi-Architecture Automata-Processing Research and Execution Ecosystem. In *Computer Architecture Letters*, vol. 17, no. 1, pp. 84-87, Jan.-June 1 2018. IEEE. (~24% acceptance rate)
🌐 https://doi.org/10.1109/LCA.2017.2780105

WORKSHOP PROCEEDINGS (4 PEER-REVIEWED)

CCSW '20   Yujun Qin[†], Samuel Gonzalez[†], **Kevin Angstadt**, Xiaowei Wang, Stephanie Forrest, Reetuparna Das, Kevin Leach, and Westley Weimer. MARTINI: Memory Access Traces to Detect Attacks. In *Proceedings of the 2020 Cloud Computing Security Workshop*, Virtual Event, USA, 2020. ACM. (30% acceptance rate)
🌐 https://doi.org/10.1145/3411495.3421353

APR '20   Yu Huang, **Kevin Angstadt**, Kevin Leach, and Westley Weimer. Selective Symbolic Type-Guided Checkpointing and Restoration for Autonomous Vehicle Repair. In: *Proceedings of the First International Workshop on Automated Program Repair*, Seoul, Republic of Korea, 2020.
🌐 https://doi.org/10.1145/3387940.3392201

WAX '18   Sihang Liu, **Kevin Angstadt**, Mike Ferdman, and Samira Khan. ARMOR: Towards Restricted Approximation with a Worst-Case Guarantee. In: *Proceedings of the 2018 Workshop on Approximate Computing Across the Stack*, Williamsburg, VA, 2018.
🌐 http://approximate.computer/wax2018/papers/wax2018-paper10.pdf

DSN-W '16   Kate Highnam[†], **Kevin Angstadt**, Kevin Leach, Westley Weimer, Aaron Paulos, and Patrick Hurley. An Uncrewed Aerial Vehicle Attack Scenario and Trustworthy Repair Architecture. In *Proceedings of the 46th International Conference on Dependable Systems and Networks*, Industrial Track, Toulouse, France, 2016. IEEE.
🌐 https://doi.org/10.1109/DSN-W.2016.63

INVITED PAPERS

CODES '16   Ke Wang, **Kevin Angstadt**, Chunkun Bo, Nathan Brunelle, Elaheh Sadredini, Tommy Tracy, II, Jack Wadden, Mircea Stan, and Kevin Skadron. An overview of Micron's Automata Processor. In *Proceedings of the Eleventh IEEE/ACM/IFIP International Conference on Hardware/Software Codesign and System Synthesis*, Pittsburgh, PA, 2016. ACM.
🌐 http://doi.org/10.1145/2968456.2976763

PATENTS AND TECHNICAL REPORTS

Jack Wadden and **Kevin Angstadt**. Systems and Methods for Disjoint Report Merging. US Patent No. 11,055,257 B2, Filed May 9, 2017, Issued July 6, 2021.
🌐 http://patft1.uspto.gov/netacgi/nph-Parser?patentnumber=11055257

Kevin Angstadt, Jack Wadden, Westley Weimer, and Kevin Skadron. MNRL and MNCaRT: An Open-Source, Multi-Architecture State Machine Research and Execution Ecosystem. Technical Report CS-2017-01, Department of Computer Science, University of Virginia, May 2017.
🌐 https://doi.org/10.18130/V3FN18

STUDENT MENTEES

18 undergraduate students: 3 current; 6 students with associated manuscripts

† Associated Publication or Submitted Manuscript

2022–present	**Cody Bryan** Mentored an honors SYE project to develop a web-based fractal generation and exploration tool.
2022–present	**Charlie Reinhardt** Mentored an honors SYE project to develop an interactive debugger for the snail programming language.
2021–present	**Cailani Lemieux Mack** Mentored on independent research and honors SYE project to allow for reinitialization and restart of quadcopter control software mid-flight.
2022	**Glendalys Medina** Mentored on project studying the emergence of bias in computational systems.
2022	**Molly Sullivan** Mentored on project to develop color-following LEDs for TV screen.
2021	**Kimberly Merchant** (SLU '22), Mentored on project to improve the accessibility of the online StatKey statistics software. Moved on to Veoci.
2019–2021	**Fee Christoph**† (U-M '21), Mentored and collaborated on a published conference manuscript (ITiCSE '21) studying archival academic data to determine relationships between academic program retention, performance in intermediate Computer Science courses, and demographics.
2019–2020	**Ian Bertram**† Collaborated on a published conference manuscript (PROMISE '22) involving capturing and modeling damage patterns in disk drives.
2019–2020	**Michael Flanagan** (U-M '21), Collaborated on project involving capturing and modeling damage patterns in disk drives. Moved on to Wolverine Trading.
2018–2019	**Samuel Gonzalez**† (U-M '20), Mentored and collaborated on a published workshop paper (CCSW '20) that leverages hardware acceleration to detect malicious software behavior. Moved on to Accurate Technologies.
2018–2019	**Linh Le** (U-M '19), Mentored undergraduate research project to understand if memory traces could be used differentiate programs. Moved on to JPMorgan Chase & Co.
2018–2019	**Yujun Qin**† (U-M '20), Mentored and collaborated on a published workshop paper (CCSW '20) that leverages hardware acceleration to detect malicious software behavior. Moved on to Masters program at Carnegie Mellon University.
2018	**Aniruddh Agarwal** (U-M '19), Mentored undergraduate research project modeling hard disk failure patterns. Moved on to Squarepoint Capital.
2016–2017	**Emma Fass** (UVA '18), Mentored undergraduate research project for running surface detection using wearable sensors. Moved on to Pariveda Solutions.
2016–2017	**Luke Merrick** (UVA '18), Mentored undergraduate research project for running surface detection using wearable sensors. Moved on to Fiddler Labs.
2016–2017	**Joe Tidwell** (UVA '18), Mentored undergraduate research project for running surface detection using wearable sensors. Moved on to Peace Corps.

2016–2018   **Matthew Casias**[†] (UVA '19), Mentored and collaborated on human study of an interactive debugger for a domain-specific language resulting in published conference paper (ASPLOS '19). Moved on to Capital One.

2015–2016   **Kate Highnam**[†] (UVA '16), Mentored and collaborated on autonomous quadcopter project resulting in published workshop paper (DSN-W '16). Moved on to Capital One and now PhD student at Imperial College London.

FUNDING AND GRANTS

2022–2026   **SHF: Medium: Near-Hardware Program Repair and Optimization**   **$1,199,997**
National Science Foundation   *SLU portion: $99,998*
Co-PI with Westley Weimer (Michigan) and Stephanie Forrest (Arizona State)
The project will address the challenges of using automated techniques in near-hardware optimization, repair, and synthesis, including: automated optimization of GPU software, automatically fixing bugs in hardware designs, and efficiently synthesizing hardware descriptions from legacy software.

2018–2020   **Diverse Voices in Computer Science Speaker Series**   **$30,000**
University of Michigan
Rackham Faculty Allies and Student Ally Diversity Grants, included 50% department matching funds. Responsibilities included: writing proposal and reports, selecting candidate speakers, organizing visitor schedules and meetings, and collecting student feedback to improve program.

SERVICE

2022–present   **Information Technology Committee**, St. Lawrence University
Served as one of three faculty members of the tripartite committee on campus information technology.

2022–present   **Website and Social Media Sub-Committee**, Department of Math, Computer Science & Statistics, St. Lawrence University
Assist department in maintaining web and social media presence.

2021   **LMS Transition Team**, St. Lawrence University
Served on faculty advisory committee to support Information Technology's transition from Sakai to Canvas.

2020   **Workshop Presenter**, Faculty Develpment Series, St. Lawrence University
Developed and presented three (3) workshop on Gradescope (online assignment submission and grading). Attendees included colleagues from NY6 institutions.

2019–2020   **Engineering Teaching Consultant**, Center for Research on Learning and Teaching in Engineering, University of Michigan
Consult with and mentor undergraduate and graduate teaching assistants for the College of Engineering. Responsibilities include: conducting classroom observations, one-on-one consultations, and professional development.

2019–2020   **Diversity Workshop Facilitator**, Computer Science and Engineering Division, Department of Computer Science and Electrical Engineering, University of Michigan
Developed and facilitated 90 minute workshops for over 200 student instructors in core CS courses. Topics included stereotype threat, implicit bias, and impostor syndrome.

2017   **Co-Chair, Graduate Student Group**, Department of Computer Science, University of Virginia
Attended and participated in Computer Science faculty meetings to represent student interests within the department.

2015–2017	**Tea Time Tsar**, Department of Computer Science, University of Virginia Organized and oversaw weekly social gathering for graduate students and faculty
2015	**Member, Graduate Student Orientation Committee**, Department of Computer Science, University of Virginia Planned and organized orientation for incoming graduate students. Worked with department staff to arrange advising meetings and photographs for website.
2015	**Summer Camp Instructor**, LEAD Computer Science Program, University of Virginia Co-led computer science and programming classes for week-long camp for middle- and high-school students.

HONORS AND AWARDS

2017	Graduate Student Award for Outstanding Teaching, UVA Department of Computer Science (One award among 150 graduate students, voted on by faculty)
2017	Graduate Student Award for Outstanding Service, UVA Department of Computer Science (Two awards among 150 graduate students, voted on by faculty)
2014–2017	Olive B. and Franklin C. Mac Krell Fellow, Jefferson Scholars Foundation (3 fellowships awarded among 394 offers of admission to graduate programs in the School of Engineering and Applied Science at the University of Virginia; nomination only)
2014–2015	Virginia Commonwealth Fellowship, School of Engineering and Applied Science, University of Virginia (nomination only)
2008	Eagle Scout, BSA Troop 162, Latham, NY

SOFTWARE TOOLS

StatKey	Web-based statistics tools associated with *Statistics: Unlocking the Power of Data* by Robin Lock, Patti Lock, Kari Lock Morgan, Eric Lock, Dennis Lock. Wiley, 2013 (developed with Ed Harcourt, Rich Sharp and the authors of the book). Usage (as of 2022-09-21): **1,884,942 users** and 35,764,778 page views. 🌐 http://www.lock5stat.com/statkey
snail	The Strings Numbers Arrays and Inheritance Language (snail) is a dynamically typed, expression-based, object-oriented programming language that is simple enough to be implemented in a one-semester course. 🌐 https://snail-language.github.io
MNRL	Specification language and API for finite state machines. 🕹 https://github.com/kevinaangstadt/mnrl
MNCaRT	An end-to-end ecosystem for research on, and execution of, finite automata across multiple computing architectures (developed with Jack Wadden, Vinh Dang, Ted Xie, Dan Kramp, Westley Weimer, Mircea Stan, and Kevin Skadron). 🕹 https://github.com/kevinaangstadt/MNCaRT
AutomataSynth	Automatically synthesize finite automata from C code. 🕹 https://github.com/kevinaangstadt/automata-synth
RAPID	A C- or Java-like language for specifying inexact pattern matches in sequences of input data. 🕹 https://github.com/kevinaangstadt/rapid
hscompile	An extension to the Hyperscan regular expression processing engine to support direct loading and execution of finite automata. 🕹 https://github.com/kevinaangstadt/hscompile

START	Automated software framework for diversification, repair, and monitoring of autonomous vehicle control systems (developed with Kevin Leach, Christopher Timperley, Aaron Paulos, Zech Bertilson, Anh Nguyen-Tuong, and Jonathan Dorn).
VASim-dpda	An engine for execution and transformation of pushdown automata for large-scale automata processing applications (developed with Jack Wadden [author of original VASim]). ○ https://github.com/kevinaangstadt/VASim/tree/dpda

PRESENTATIONS AND POSTERS

2021	**Every Computing Thing: Supporting and Securing the Systems of Tomorrow**, St. Lawrence University, Canton, New York
2019	**All Computers Great and Small: Supporting and Securing the Systems of Tomorrow**, St. Lawrence University, Canton, New York
2018	**MNRL and MNCaRT: An Open-Source, Multi-Architecture State Machine Research and Execution Ecosystem**, GOMACTech 2018, Miami, Florida
2016	**START: UAVs—Software Techniques for Automated Resiliency and Trustworthiness in Uncrewed Aerial Vehicles**, Thornton Society Reception, University of Virginia (*public outreach*)
2016	**RAPID: Accelerating Pattern Search Applications with Reconfigurable Hardware**, TECH-CON 2016, Austin, Texas (Best in Session, selected from among 5 presentations)
2016	**RAPID Programming of Pattern-Recognition Processors**, Center for Automata Processing Webinar Series, University of Virginia
2016	**Quadcopter Basics: Opportunities and Challenges**, Rivanna Radio Control Club, Charlottesville, Virginia Presented overview of quadcopter software and resiliency research to group of 15 club members (*public outreach*)
2016	**Self-Healing Autonomous Vehicles: Increasing System Resiliency with Automated Program Repair**, Public Days, University of Virginia (*public outreach*)
2016	**Getting Started with the Micron Automata Processor**, Center for Automata Processing Webinar Series, University of Virginia
2016	**Self-Healing Autonomous Vehicles: Increasing System Resiliency with Automated Program Repair**, 14th Annual Jefferson Fellows Symposium, Jefferson Scholars Foundation (*public outreach*)
2014	**Accelerating Database Joins Using a General Purpose GPU**, Festival of Science, St. Lawrence University
2012	**Developing Interactive Web Tools for Statistics Students**, Honors Reception, St. Lawrence University (*public outreach*)

PROFESSIONAL AND HONORARY SOCIETIES

Member (SIGMICRO, SIGCSE), Association for Computing Machinery (ACM)

Phi Beta Kappa (NY-Lambda)

Tau Beta Pi (MI-Gamma)

Pi Mu Epsilon (NY-Epsilon, Honorary National Mathematics Society)

Delta Phi Alpha (Eta Omicron, National German Honor Society)

Ives Music Honorary Society (St. Lawrence University)

MISCELLANEOUS

Languages   Native English, Proficiency in German

Citizenship   United States

REFERENCES

Available upon request.

Canton, New York, 21. September 2022