

Tej Chajed

Curriculum Vitae

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🌐 <https://chajed.io>

Research Interests

I work in the area of systems verification. In my research I develop **realistic, performant systems**, specify their intended behavior, then prove that the implementation always meet the specification.

Education

- 2014–2022 **Ph.D. in Computer Science**, MIT, Cambridge, MA
Verifying a concurrent, crash-safe file system with sequential reasoning
- 2014–2017 **M.S. in Computer Science**, GPA: 4.0/4.0, MIT, Cambridge, MA
Verifying an I/O-concurrent file system
- 2010–2014 **B.S. in Electrical Engineering and Computer Science**, GPA: 3.97/4.0, University of Illinois, Urbana, IL

Positions

- 2023–*present* **Assistant professor**, University of Wisconsin-Madison
- 2022–2023 **Postdoctoral researcher**, at VMware Research
- 2014–2022 **Research assistant**, at MIT in the PDOS group
advised by Frans Kaashoek, Nikolai Zeldovich, and Joseph Tassarotti

Conference Publications

- OSDI 2025 **Basilisk: Using Provenance Invariants to Automate Proofs of Undecidable Protocols**
Tony Nuda Zhang, Keshav Singh, Tej Chajed, Manos Kapritsos, Bryan Parno
- SOSP 2024 **Verus: A Practical Foundation for Systems Verification**
Andrea Lattuada, Travis Hance, Jay Bosamiya, Matthias Brun, Chanhee Cho, Hayley LeBlanc, Pranav Srinivasan, Reto Achermann, *Tej Chajed*, Chris Hawblitzel, Jon Howell, Jacob R. Lorch, Oded Padon, Bryan Parno
- HotStorage 2024 **Shadow Filesystems: Recovering from Filesystem Runtime Errors via Robust Alternative Execution**
Jing Liu, Xiangpeng Hao, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau, *Tej Chajed*
- OSDI 2024 **Inductive Invariants That Spark Joy: Using Invariant Taxonomies to Streamline Distributed Protocol Proofs**
Tony Nuda Zhang, Travis Hance, Manos Kapritsos, *Tej Chajed*, Bryan Parno
- OSDI 2024 **Anvil: Verifying Liveness of Cluster Management Controllers**
Xudong Sun, Wenjie Ma, Jiawei Tyler Gu, Zicheng Ma, *Tej Chajed*, Jon Howell, Andrea Lattuada, Oded Padon, Lalith Suresh, Adriana Szekeres, Tianyin Xu

- HotOS 2024 **Beyond isolation: OS verification as a foundation for correct applications**
Matthias Brun, Reto Achermann, *Tej Chajed*, Jon Howell, Gerd Zellweger, Andrea Lattuada
- VLDB 2023 **DBSP: Automatic Incremental View Maintenance for Rich Query Languages**
Mihai Budiu, *Tej Chajed*, Frank McSherry, Leonid Ryzhyk, Val Tannen
- OSDI 2022 **Verifying the DaisyNFS concurrent and crash-safe file system with sequential reasoning**
Tej Chajed, Joseph Tassarotti, Mark Theng, M. Frans Kaashoek, Nikolai Zeldovich
- OSDI 2021 **GoJournal: a verified, concurrent, crash-safe journaling system**
Tej Chajed, Joseph Tassarotti, Mark Theng, Ralf Jung, M. Frans Kaashoek, Nikolai Zeldovich
- SOSP 2019 **Verifying concurrent, crash-safe systems with Perennial**
Tej Chajed, Joseph Tassarotti, M. Frans Kaashoek, Nikolai Zeldovich
- Security 2019 **EverParse: Verified Secure Zero-Copy Parsers for Authenticated Message Formats**
Tahina Ramananandro, Antoine Delignat-Lavaud, Cédric Fournet, Nikhil Swamy, *Tej Chajed*, Nadim Kobeissi, Jonathan Protzenko
- PLDI 2019 **Argosy: Verifying Layered Storage Systems with Recovery Refinement**
Tej Chajed, Joseph Tassarotti, M. Frans Kaashoek, Nikolai Zeldovich
- OSDI 2018 **Verifying concurrent software using movers in CSPEC**
Tej Chajed, M. Frans Kaashoek, Butler Lampson, and Nikolai Zeldovich
- OSDI 2018 **Proving confidentiality in a file system using DiskSec**
Atalay İleri, *Tej Chajed*, Adam Chlipala, M. Frans Kaashoek, Nikolai Zeldovich
- SOSP 2017 **Verifying a high-performance crash-safe file system using a tree specification**
Haogang Chen, *Tej Chajed*, Alex Konradi, Stephanie Wang, Atalay İleri, Adam Chlipala, M. Frans Kaashoek, Nikolai Zeldovich
- SOSP 2015 **Using Crash Hoare Logic for certifying the FSCQ file system**
Haogang Chen, Daniel Ziegler, *Tej Chajed*, Adam Chlipala, M. Frans Kaashoek, and Nikolai Zeldovich
- SoCC 2013 **Natjam: design and evaluation of eviction policies for supporting priorities and deadlines in mapreduce clusters**
Brian Cho, Muntasir Rahman, *Tej Chajed*, Indranil Gupta, Cristina Abad, Nathan Roberts, Philbert Lin

Workshop Papers

- CoqPL 2021 **Record Updates in Coq**
Tej Chajed
- CoqPL 2020 **Verifying concurrent Go code in Coq with Goose**
Tej Chajed, Joseph Tassarotti, M. Frans Kaashoek, Nikolai Zeldovich

HotOS 2015 **Amber: Decoupling user data from web applications**
Tej Chajed, Jon Gjengset, Jelle van den Hooff, M. Frans Kaashoek, James Mickens,
Robert Morris, Nickolai Zeldovich

Teaching

Fall 2025 **Instructor**, [CS 839: Systems verification, UW–Madison](#)
Spring 2025 *teaching release*
Fall 2024 **Instructor**, [CS 839: Systems verification, UW–Madison](#)
Spring 2024 **Instructor**, [CS 537: Operating Systems, UW–Madison](#)
Fall 2023 **Instructor**, CS 839: Systems verification, UW–Madison
Fall 2020 **TA**, 6.826 (Principles of Computer Systems), MIT
Fall 2019 **TA**, 6.826 (Principles of Computer Systems), MIT
Fall 2017 **TA**, 6.826 (Principles of Computer Systems), MIT
Spring 2017 **Course development**, 6.826 (Principles of Computer Systems), MIT
During this time I designed and implemented the programming assignments for 6.826.

Mentorship

2025–*present* Justina Rhee, Undergraduate (WISCERS)
2025–*present* Levi Redlin, Ph.D student (PMP)
2024–*present* Jiangyi Liu, Ph.D student
2024–*present* Matt Schwennesen, Ph.D student
2024–*present* Jinlang Wang, Ph.D student
2024–*present* Nikhil Chatterjee, Undergraduate
2023 Weijun Pan, Undergraduate
2022 Mark Theng ([master's thesis](#))
2021 Sharon Lin, undergrad
2020 Sydney Gibson ([master's thesis](#))
2019 Eleftherios Ioannidis ([master's thesis](#))
2017 Alex Konradi ([master's thesis](#))
2017 Daniel Ziegler ([master's thesis](#))

Industry Experience

Summer **Research Intern**, Microsoft Research, Cambridge, UK
2017 Verifying low-level parsing in F*, with Cédric Fournet
Summer **Software Engineering Intern**, Google, Zürich, Switzerland
2014

Honors & Awards

2022 Dennis Ritchie Doctoral Dissertation Award Honorable Mention (SIGOPS)
2022 George M. Sprowls PhD Thesis Award (MIT)

2014–2019 NSF Graduate Research Fellowship
 2014 Jacobs Presidential Fellowship
 2010–2014 Chancellor’s Scholar

Professional Service

SysDW 2024 Program Committee
 PLDI 2024 Program Committee
 CoqPL 2024 Workshop Co-organizer
 SysDW 2023 Program Committee
 CPP 2023 Program Committee
 POPL 2023 Program Committee
 CoqPL 2023 Workshop Co-organizer
 PLDI 2022 Program Committee
 POPL 2021 Organized a tutorial “Iris — A Modular Foundation for Higher-Order Concurrent Separation Logic”

Course evaluations

Course	Term	Responses/ Enrollment	Recommend Instructor	Dept. Average	How Useful	Dept. Average
<i>not teaching</i>	Sp 2025	—	—	—	—	—
CS 839	Fa 2024	17 / 18	6.71 / 7	—	5.59 / 7	—
CS 537	Sp 2024	41 / 131	5.80 / 7	5.39 (ugrad)	5.83 / 7	5.24 (ugrad)
CS 839	Fa 2023	8 / 21	6.13 / 7	5.94 (grad)	5.50 / 7	5.52 (grad)