Timothy J. Aveni

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tja@berkeley.edu

Education

Aug. 2022-present	**University of California, Berkeley** Ph.D. in Computer Science	*Berkeley, CA* GPA: 4.0
Aug. 2016-May 2019	**Georgia Institute of Technology** Bachelor of Science in Computer Science	*Atlanta, GA* GPA: 4.0

Research experience

Aug. 2022-present — **Berkeley Institute of Design**, University of California, Berkeley — *Berkeley, CA*
Ph.D. student — *Advised by Björn Hartmann, Armando Fox*
- Studying human-computer interaction, especially as it relates to how people instruct their computers and how we can teach people to better construct digital workflows
- Building tools to enable faster prototyping of AI-backed tools, both for skilled and for novice programmers

Nov. 2016-May 2019 — **Contextual Computing Group**, Georgia Institute of Technology — *Atlanta, GA*
Undergraduate Researcher — *Advised by Caitlyn Seim under Thad Starner*
- Explored the acquisition of computer stenography skills through passive haptic stimuli
- Built hardware, firmware, and software, start to finish, to power and analyze ~50 user trials
- Built Android app to train motor skills, used in "Towards Haptic Learning on a Smartwatch"

Publications

Peer-reviewed

2025 *(to appear)*	<u>T. J. Aveni</u>, J. Smith, B. Hartmann, and A. Fox. 2025. Supporting Students in Prototyping AI-backed Software with Hosted Prompt Template APIs. In *Proceedings of the 2025 Innovation and Technology in Computer Science Education (ITiCSE '25)*. ACM, New York, NY, USA.
2023	<u>T. J. Aveni</u>, A. Fox, and B. Hartmann. 2023. "Bringing Context-Aware Completion Suggestions to Arbitrary Text Entry Interfaces". In *Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST '23 Adjunct)*. Association for Computing Machinery, New York, NY, USA.
2019	<u>T. J. Aveni</u>, C. Seim and T. Starner, "A preliminary apparatus and teaching structure for passive tactile training of stenography," *2019 IEEE World Haptics Conference (WHC)*, Tokyo, Japan, 2019.
2018	C. Seim, R. Pontes, S. Kadiveti, Z. Adamjee, A. Cochran, <u>T. Aveni</u>, P. Presti, T. Starner. "Towards Haptic Learning on a Smartwatch," *ISWC '18*. ACM, New York, NY, USA, 2018.

Additional scholarship

2023	<u>T. J. Aveni</u>, A. Fox, and B. Hartmann. 2023. "OmniFill: Domain-Agnostic Form Filling Suggestions Using Multi-Faceted Context". *arXiv:2310.17826 [cs.HC]*.
2019	<u>T. J. Aveni</u>, "Passive Haptic Learning for Computer Stenography," 2019. Undergraduate Thesis.

Teaching experience

Jan. 2025-present, Jan. 2024-May 2024 — **Graduate Student Instructor (TA)**, User Interface Design and Development — *Berkeley, CA*
- Held two weekly discussion sections
- Developed **reagent**, a platform to facilitate rapid prototyping of AI-backed software
- Designed new homework to introduce students to developing intelligent user interfaces

Jun. 2024-Aug. 2024 — **Instructor**, User Interface Design and Development — *Berkeley, CA*
- Developed and delivered all course lectures for an 80-student class
- Developed and deployed a platform for interactive presentations of course material
- Reworked homeworks to enable targeted automatic feedback

Aug. 2023- Dec. 2023	**Graduate Student Instructor (TA)**, Introduction to Software Engineering	*Berkeley, CA*

- Led a team of 7 teaching assistants
- Held two weekly discussion sections

Aug. 2020- May 2021	**Volunteer teacher**, Introduction to Computer Science	*Ajo, AZ (remote)*

TEALS Program (Technology Education and Literacy in Schools), Microsoft Philanthropies

- Taught an introductory high school computer science course in a team with one other volunteer teacher, two volunteer TAs, and a classroom teacher
- Led two classes per week remotely

Aug. 2018- May 2019	**Head Teaching Assistant**, Data Structures and Algorithms (CS 1332), Georgia Institute of Technology

- Managed ~30 teaching assistants in a class with ~600 students per semester
- Developed and taught various lectures
- Designed exam questions and rubrics, oversaw exam administration and grading
- Developed tools to assist course administration and notify students of incomplete submissions
- Organized hiring and interviewing for new TAs

Jan. 2017- May 2018	**Teaching Assistant**, Data Structures and Algorithms (CS 1332), Georgia Institute of Technology

- Held weekly recitation and office hours
- Graded and provided feedback on Java homework assignments and exams
- Developed homework grading assistant software used by all CS 1332 TAs

Industry experience

Aug. 2020- June 2022	**Senior Software Engineer**, Gradescope	*Oakland, CA*

Turnitin

- Wrote full-stack Rails/React code for products that help instructors grade assessments
- Remediated accessibility issues to meet WCAG 2.1 recommendations
- Introduced static code analysis and automation to improve i18n workflows
- Participated in the user-facing engineering email support rotation

June 2019- June 2020	**Software Engineer**, Misinformation Transparency	*Menlo Park, CA*

Facebook

- Worked full-stack on products that educate Facebook and Instagram users about fact-checks for false information
- Designed and built a caching framework to handle the load of trillions of requests per day, saving ~$1MM annually in compute
- Enhanced data quality, leveraged logging to inform product decisions and discover anomalies
- Used static analysis to discover and remove dead code across the entire web codebase

May 2018- Aug. 2018	**Software Engineering Intern**, Social Video Discovery	*Menlo Park, CA*

Facebook

- Wrote Flux + React code with a GraphQL backend to build an interactive video editing UX
- Enhanced Facebook's video encoding infrastructure, resulting in an order-of-magnitude speedup in multiple product flows

May 2017- Aug. 2017	**Software Engineering Intern**, Messenger Monetization	*Menlo Park, CA*

Facebook

- Worked full-stack on improving the creation flow for Click-to-Messenger advertisements

Selected technical projects

Dec. 2023- present	**reagent**

- Designed and developed an open-source Web platform to facilitate rapid prototyping of AI-backed software for developers
- Deployed in the classroom, with tools for teachers to fund and assist students' experimentation
- Studied a classroom deployment in summer 2024, culminating in ITiCSE 2025 publication

May 2020- present	**Language Transfer app**
	- Designed, built, and shipped an open-source app for Language Transfer, a free series of language courses for beginners
	- Developed and currently maintain backend infrastructure with Docker and AWS
	- To date, **500,000+ installs, 10,000+ ratings, and 4.9 overall rating on Google Play**

Involvement and Recognition

Mar. 2025	**Outstanding Outstanding Graduate Student Instructor Award**, UC Berkeley
Aug. 2022	**Berkeley Fellowship** awardee
June 2020	**Institute for Data, Democracy, & Politics**, George Washington University
	- Invited to interview, included in Forum on Social Media Disinformation and Election Interference
Oct. 2020 (Speaker)	**HexLabs**
	- Invited guest speaker at HackGT 7 (2020)
Jan. 2018- May 2019 (Organizer),	- Assisted in organizing and running HexLabs events, including HackGT
	- Developed curriculum for events, including Catalyst, a CS event for underserved HS students
	- Developed and presented an educational React workshop at HackGT 5
Dec. 2018, May 2019	**Center for Teaching and Learning**, Georgia Institute of Technology
	- Thank a Teacher award
Mar. 2016	**National Merit Scholar**