J.D. Zamfirescu-Pereira

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ABOUT ME

I am a technologist and a senior PhD student; I study joint human/AI systems using a **systems HCI** approach.

I'm advised by Björn Hartmann at UC Berkeley, supported by a Chancellor's Fellowship and a Google PhD Fellowship; I also work closely with John DeNero and Narges Norouzi at Berkeley, and with Qian Yang at Cornell.

I teach artists and designers how to program at CCA, where I started a "Computer Science" minor in disguise. I've founded two startups (one acquired), and now advise startups and startup founders on AI-related topics.

EDUCATION

2019- **University of California, Berkeley,** Berkeley, CA
- Ph.D. in Computer Science (expected 2025)
  - *Research focus on human-AI collaboration.*
  - *Advised by Björn Hartmann.*
  - *Awarded the highly-selective **Chancellor's Fellowship** (2019) in support of the diversification of the academy.*
  - *Awarded the prestigious **Google PhD Fellowship** (2024) for exceptional and innovative research.*
- Mentor to several undergraduate and graduate student projects, including a few generative AI projects, as well as interfaces for better spreadsheets, and AR applications of hyperspectral imaging.

2001-2006 **Massachusetts Institute of Technology,** Cambridge, MA
- M. Eng. in Computer Science and Engineering (June 2006)
  - *Thesis title: Measuring the Performance of a Distributed Quota Enforcement System for Spam Control.*
  - *Supervised by Hari Balakrishnan.*
- Bachelor of Science in Computer Science
  - *Undegraduate project: Sharing Message Marbles with SMPL.*
  - *Supervised by John Maeda.*
- Graduate coursework included Distributed Systems, Operating Systems, Computer Networks, Artificial Intelligence, and Theory of Computation.
- GPA: 5.0/5.0
- Member, HKN and TBP honor societies.

TEACHING

2014- **California College of the Arts** San Francisco, CA
- Assistant Professor (non-tenure) in Critical Studies. Developing technology courses; founded and direct a new minor in Computational Practices. Strong evaluations. In personal conversations, many students expressed that my courses are among the best they've taken; in evaluations, one says: "J.D. is easily one of the best teachers I have had at this school."

Spring 2018, Fall 2021 & 2023 **UC Berkeley, Jacobs Institute for Design Innovation & EECS** Berkeley, CA

As Lecturer at Jacobs, developed and taught a new course: Creative Programming & Electronics.

As Teaching Assistant, supported "Debates in Design" at Jacobs, and CS 61A, Berkeley's introductory computer science course, for EECS.

2013-2015 **Workshop Weekend: Arduino** Oakland, CA

Led a team of 8 teachers in developing a curriculum and teaching a full weekend of programming and electronics topics to a group of 30 students. Eight successful events run; students ranged in age from 11-70+.

2011-2015 **Workshop Weekend** Oakland, CA

Taught Workshop Weekend courses on programming and electronics. Built several systems to assist in my teaching. Students have ranged in age from 8-70+.

Fall 2005 **MIT EECS Department,** Cambridge, MA

Teaching Assistant for 6.001, EECS's introductory CS course. Duties included teaching 6 tutorial sections per week of 5 students each, grading projects and exams. Rated 6.7/7 by students. Quoting one: "[J.D.] is awesome."

2001-2013 **Stanford ESP** & **MIT ESP,** Palo Alto, CA & Cambridge, MA

Taught Splash (2-hour) and HSSP (10-week) classes to high school students on computer science, programming, electronics, computer networking, and other topics including photography and failure. My computer-related classes consistently receive high scores in evaluations, and are often listed among students' favorites.

AWARDS & GRANTS

August 2024 Google PhD Fellowhship

July 2024 Berkeley AI Research / Google Reseach Award ($61k)
Student PI, with Bjoern Hartmann and Michael Terry

May 2024 University of California, EECS Evergreen Award for Undergraduate Researcher Mentoring ($1400)

April 2019 University of California, Chancellor's Fellowship

April 2019 Stanford Engineering Fellowship (declined)

RESEARCH

June 2018- **Berkeley Institute of Design & Berkeley AI Research,** Berkeley, CA

Research work in human-AI interaction; now, PhD student studying how Large Language Models (LLMs) like ChatGPT impact design proceses.

Successful, highly-cited work on how experts and non-experts can design prompts for LLMs; recent focus on how LLMs can be used to support design processes and support programming education.

September 2017-June 2018 **Stanford Center for Design Research,** Stanford, CA

Research work on Human-Robot Interaction; developed a system to allow Wizard-of-Oz-style experiments for "everyday" robots, with multiple human operators controlling multiple robots as a proxy for autonomy. Big-picture goal is, first, to understand how robots *should* behave in everyday interactions, and second, to understand how design tools shape that thinking.

Devising and running experiments to observe how humans treat apparently-autonomous everyday robots under a variety of conditions, as well as how humans control those robots, under those same conditions.

January 2016-May 2017 **CCA Open Collaboration Lab,** San Francisco, CA

Founded a research initiative at CCA investigating collaboration with technology, between students, and across disciplines, across classes and across time. Raised $20k for research activities from internal and external sources.

In one experiment, we ran a collaboration across two classes at CCA: Programming & Electronics and with a scultpure class called Digital Tools. Each student from one class was paired with another from the other class; students conceived of and developed a mechanized (the Programming & Electronics piece) machine-cut hand-finished (the Digital Tools piece) skull.

May 2004-June 2006 **MIT CSAIL, Network & Mobile Systems group,** Cambridge, MA

Analyzed a system for spam reduction using "electronic stamps" and distributed quota enforcement for spam control.

Developed a prototype system for mobile-assisted localization of nodes in a sensor network.

Summer 2004-Spring 2005 **MIT Media Lab, Physical Language Workshop,** Cambridge, MA

Developed a voice-controlled magazine viewer in John Maeda's group.

Created an interface for a voice message bank; this work became by undergarduate thesis.

TALKS, PAPERS, PANELS, PATENTS

February 2025 **Paper & Talk: 61A Bot Report: AI Assistants in CS1 Save Students Homework Time and Reduce Demands on Staff. (Now What?)**

J.D. Zamfirescu-Pereira, L. Qi, B. Hartmann, J. DeNero, N. Norouzi; In SIGCSE '25, *Pittsburgh, PA*

October 2024 **Paper: Who Validates the Validators? Aligning LLM-Assisted Evaluation of LLM Outputs with Human Preferences**

S. Shankar, J.D. Zamfirescu-Pereira, B. Hartmann, A. Parameswaran, I. Arawjo; In UIST '24, *Pittsburgh, PA*

June 2024 **Invited Talk & Panel: Is "Good Enough" Good Enough? Considerations for Deploying LLM-based Systems, on a panel for AI "Deployment Safeguards"**

8th Annual CHAI Workshop (Berkeley Center for Human-Compatible AI), Asilomar, CA.

May 2024 **Paper & Talk: Prompting for Discovery: Flexible Sense-Making for AI Art-Making with DreamSheets**

S.G. Almeda, J.D. Zamfirescu-Pereira, K.W. Kim, P.M. Rathnam, B. Hartmann; In CHI '24, *Honolulu, HI*

May 2024 **Paper & Talk: Rambler: Supporting Writing With Speech via LLM-Assisted Gist Manipulation**

S. Lin, J. Warner, J.D. Zamfirescu-Pereira, M. Lee, S. Jain, M. Huang, P. Lertvittayakumjorn, S. Cai, S. Zhai, B. Hartmann, C. Liu; In CHI '24, *Honolulu, HI*

February 2024 **Invited Talk: From Incantations to Incarnations: How Generative AI Tools Can Reshape Design Process**

IBM Research HCAI Seminar.

December 2023 **Paper & Poster: Conversational Programming with LLM-Powered Interactive Support in an Introductory Computer Science Course.**

J.D. Zamfirescu-Pereira, L. Qi, B. Hartmann, J. DeNero, N. Norouzi; In NeurIPS 2023, GAIED Workshop, *New Orleans, LA*.

October 2023 **Demo & Poster: Towards Image Design Space Exploration in Spreadsheets with LLM Formulae**

J.D. Zamfirescu-Pereira, S.G Almeda, K.W. Kim, B. Hartmann; In UIST 2023, Demo Track, *San Francisco, CA*

August 2023 **Invited Podcast: Why Prompting is Hard, with J.D. Zamfirescu-Pereira**
Data Skeptic — Machine Intelligence.

July 2023 **Paper & Poster: Iterative Disambiguation: Towards LLM-Supported Programming and System Design.**
J.D. Zamfirescu-Pereira, Bjoern Hartmann; In ICML 2023, AI&HCI workshop *Honolulu, HI*.

June 2023 **Paper & Talk: Herding AI Cats: Lessons from Designing a Chatbot by Prompting GPT-3.**
J.D. Zamfirescu-Pereira, H. Wei, A. Xiao, K. Gu, G. Jung, M. Lee, B. Hartmann, Q. Yang; In DIS 2023, *Pittsburg, PA*.

June 2023 **Paper: Detecting disparities in police deployments using dashcam data.**
M. Franchi, J.D. Zamfirescu-Pereira, W. Ju, E. Pierson; In FAccT 2023, *Chicago, IL*.

April 2023 **Paper & Talk: Why Johnny Can't Prompt: How Non-AI Experts Try (and Fail) to Design LLM Prompts**
J.D. Zamfirescu-Pereira, R. Wong, B. Hartmann, Q. Yang; In CHI 2023, *Hamburg, Germany*.
Cited **594** times; most downloaded paper in the history of CHI, **55,175** downloads.

March 2023 **Invited Panel: Generative AI Salon #1: Human Rights Hopes & Concerns.**
Fight for the Future & Amnesty International.

March 2023 **Journal Paper: COVID-19 non-pharmaceutical interventions: data annotation for rapidly changing local policy information**
B. Hurt, O.B. Hoque, F. Mokrzycki, A. Mathew, M. Xue, L. Gabitsinashvili, H. Mokrzycki, R. Fischer, N. Telesca, L.A. Xue, J. Ritchie, J.D. Zamfirescu-Pereira, M. Bernstein, M. Whiting, M. Marathe; In *Nature Scientific Data 10, Article number: 126 (2023)*

December 2022 **Poster & Invited Presentation: Towards End-User Prompt Engineering: Lessons From an LLM-based Chatbot Design Tool.**
J.D. Zamfirescu-Pereira, R. Wong, B. Hartmann, Q. Yang; Human-Centered AI (workshop) at NeurIPS 2022, *New Orleans, LA*.

July 2022 **Paper & Talk: Trucks Don't Mean Trump: Diagnosing Human error in Image Analysis**
J.D. Zamfirescu-Pereira, J. Chen, E. Wen, A. Koenecke, N. Garg, E. Pierson; In FAccT 2022, *Seoul, Korea*.

July 2021 **Poster: Democratizing Design and Fabrication Using Speech: Exploring co-design with a voice assistant.**
A Cuadra, D. Goedicke, J.D. Zamfirescu-Pereira; In Conversational User Interfaces (CUI) 2021.

March 2021 **Paper & Talk: Fake It to Make It: Exploratory Prototyping in HRI.**
J.D. Zamfirescu-Pereira, D. Sirkin, D. Goedicke, R. LC, N. Friedman, I. Mandel, N. Martelaro, W. Ju; In HRI 2021.

October 2020 **Paper: Tracking Urban Mobility and Occupancy under Social Distancing Policy.**
W. Ju, S. Yavo-Ayalon, I. Mandel, F. Saldarini, N. Friedman, S. Sibi, J.D. Zamfirescu-Pereira, J. Ortiz; In Proceedings of Digital Government: Research and Practice, October 2020.

September 2019 **Paper: How People Experience Autonomous Intersections: Taking a First-Person Perspective.**
S. Krome, D. Goedicke, T. Matarazzo, Z. Zhu, Z. Zhang, J.D. Zamfirescu-Pereira, and W. Ju; In AutoUI 2019, *Utrecht, NL*.

May 2019 **Paper: Heimdall: a remotely controlled inspection workbench for debugging microcontroller projects.**
M. Karchemsky, J.D. Zamfirescu-Pereira, K. Wu, F. Guimbretiere, and B. Hartmann; In CHI 2019, *Glasgow, UK*. **Best Paper Honorable Mention**

June 2016, 2017, & 2018 **Invited Lecture: Capacitive Touch Sensing for Wearable Applications**
WEAR-Tech upper-division studio, CCA, *San Francisco, CA*

September 2016 **Paper: The Hybrid Lab and the Open Collaboration Lab at CCA: Making Space for Makers at an Art and Design School**
M. Haughwout, B. Haynes, D. Molnar, M. Shiloh, and J.D. Zamfirescu-Pereira; at the 1st International Symposium of Academic Makerspaces, *Cambridge, MA*

April 2016 **Installation: *This Future Has a Past...***
Technical component of an installation at the 16th international Venice Biennale of Architecture, with Katherine Lambert and Christiane Robbins. *Venice, Italy*

May 2012 **Panel: Teaching and Inspiring New Makers** Maker Faire Bay Area

March 2012 **Panel: Meta-Remix: Reflecting on four communities built for learning, tinkering, and remixing with code**
Beyond Educational Technology: Digital Media & Learning Conference, *San Francisco*

November 2010 **Talk: Collaborative Programming, a processing.js workshop**
Mozilla Drumbeat Festival: Learning, Freedom, and the Web, *Barcelona*

May 2010 **Talk: Building Your Own Google Wave Provider** Google I/O, *San Francisco*

November 2009 **Patent #9,135,312: Timeslider** (EtherPad)

April 2009 **Patent #8,656,290: Realtime synchronized document editing by multiple users** (EtherPad)

May 2006 **Paper: Distributed Quota Enforcement for Spam Control**
M. Walfish, J. Zamfirescu, H. Balakrishnan, D. Karger, and S. Shenker, in the proceedings of the *3rd USENIX Symposium on Networked Systems Design and Implementation (NSDI '06)*, *San Jose, CA*

SERVICE

Program Committees

2024, 2025 CHI (Conference on Human Factors in Computing Systems)

2025 SIGCSE TS (Technical Symposium on Computer Science Education)

2024 FAccT (ACM Conference on Fairness, Accountability, and Transparency)

2024 EAAI (AAAI Symposium on Educational Advances in Artificial Intelligence)

Invited External Reviews

2018, 2021, 2023, 2024 CHI

2020, 2022, 2023, 2024 UIST (ACM Symposium on User Interface Software and Technology)

2023, 2024 DIS (ACM Designing Interactive Systems Conference)

2021, 2022 HRI (ACM/IEEE International Conference on Human-Robot Interaction)

2023 Journal of Artificial Intelligence for Engineering Design, Analysis and Manufacturing

2024 International Journal of Human-Computer Interaction

INDUSTRY ENGAGEMENTS

May 2021- Consulting Technology Officer, **nSight Surgical.** San Francisco, CA
Advisor, director of technical development for operating room AI technology company nSight Surgical.

May 2017-August 2018 Principal, **Protist.** Oakland, CA
Founder of experimental software research studio Protist.
Developing a platform for experimenting with new software tools; first such tool focused on Augmented Reality applications.

February 2016-May 2017 Founder, **Locus.** Oakland, CA

Founder of experimental videoconferencing software Locus.
Developed a platform for experimenting with novel aural and visual interface improvements in videoconferencing, including positioned audio and facial feature transmission and reconstruction. [demo video]

April 2013-December 2015 Director & Teacher, **Workshop Weekend: Arduino.** Oakland, CA
Director and teacher for Workshop Weekend: Arduino, a weekend-long Arduino intensive workshop for adults.
Founded and led a team of 8 teachers to develop a two-day curriculum for teaching students Arduino and electronics.

May 2011-December 2015 Founder & CEO, **What Will You Learn?, Inc.** Oakland, CA
Co-founder and director of Workshop Weekend, an award-winning semiannual event connecting enthusiastic learners with expert practitioners of science, engineering, technology, and the visual, performance, and culinary arts for a wide variety of short workshops over a weekend. [press coverage]
Responsible for all technical development, program creation, and growth.

December 2009-April 2011 Senior Software Engineer, **Google, Inc.,** Sydney & San Francisco
Google App Engine: Assisted in the development of App Engine for Business.
Google Wave: Led development of the Wave open source effort, including development of a simple, fully open source web client using underlying Wave technologies; presented work at Google I/O in 2010. Received multiple peer bonuses, awarded a patent.

October 2007-December 2009 Co-founder & CTO, **AppJet, Inc.,** San Francisco, CA
Co-founded a successful technology startup; AppJet developed EtherPad, a web-based real-time document collaboration application (similar to Google Docs, but EtherPad had real-time updates when Google Docs didn't). Raised over $700K from angel investors before being acquired by Google, Inc. Work yielded two patents.
Major engineering accomplishments include:
Developed an all-in-one solution for hosting and distribution of web applications written in JavaScript and Java.
Invented a "server push" real-time update infrastructure for web browsers. Used Scala on the server, and JavaScript alone on the client.
Built and deployed the web server infrastructure for AppJet and EtherPad.

August 2006-October 2007 Software Engineer, **Google, Inc.,** New York, NY
Led development of backend of Google Health.
Trimmed and simplified the codebase, easing deployment and significantly reducing operating costs.

SELECTED PROJECTS

2013- **Rudy the Red Dot**
Rudy is a web-based IDE for learners of programming. Intended to complement a course or workshop, Rudy helps teach the introductory concepts of procedural programming.

Summer 2014 **Winston the Robot Bartender**
A robotic cocktail dispenser, Winston serves custom cocktails ordered by smartphone.

VOLUNTEERING

2008-2016 **Learning Unlimited, Inc.** Cambridge, MA
Founding Director; former Chair.
Learning Unlimited, Inc., an educational 501(c)(3), is leading a movement of college

students teaching high school students everything and anything.

2007-2012 **Stanford ESP,** Palo Alto, CA

Co-founder, former co-director of student recruitment.

I helped restart the Stanford ESP program, modeled on MIT ESP. Our first program in Spring 2008 served 300 students, a record for a new program; our recent programs serve over 2500 students each Fall and Spring.

2013-2016 **Foodwise, formerly Center for Urban Education about Sustainable Agriculture (CUESA),** San Francisco, CA

Volunteered at the Ferry Building Farmers Market. Awarded "Volunteer of the Month" in May 2014 for positive attitude and superfluous diligence.