

Peter Danenberg

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Experience

Senior Software Engineer Google DeepMind (2024–)

Moved to DeepMind to lead rapid prototyping for Gemini, where I worked with leadership to create feature prototypes within 24 hours based on insights from external biweekly meetups. Some prototypes gained visibility with top executives, including Sissie Hsiao and Sundar Pichai; and advanced to production after refinement.

I am responsible for full-stack development (front-end, back-end, modeling, and deployment), including:

- Self-orchestrating reasoning loop for tool composition (e.g., flights, hotels, search): “find the cheapest first-class tickets from Florida to Paris.”
- Asynchronous infrastructure for autonomous agents, including deep research: “where did GenZ / Millennials spend the most in the 2023 shopping season?”
- Pipeline for rendering self-contained HTML, PDF, and SVG artifacts: “generate an app for analyzing arbitrage opportunities in energy futures across European markets, integrating historical data, pricing models, and predictive simulations.”

Senior Software Engineer Google, Inc. (2021–2024)

Worked on autonomous agents in Bard; launched Bard Extensions to 1.8 million DAU using a self-orchestrating LLM. Wrote C++ backend serving neural-semantic models for Google Assistant, handling ~ 120 million queries per day. Automated training and evaluation for 54 models in 18 languages.

Software Engineer Google, Inc. (2013–2021)

Developed a pipeline for Google Assistant’s machine-translation models, launching models for multiple languages. Built Data QnR, a natural language interface to Google Analytics, supporting custom knowledge-graphs and metrics.

Co-Founder CrossFit Crown City (2011–2015)

Co-founded and grew a gym to 300 members across two locations.

Senior Software Architect Response Genetics, Inc. (2008–2012)

Developed a cancer-diagnostic system to select optimal chemotherapy, prolonging patient lives.

Intern Google, Inc. (Summer 2008)

Created Roxygen, a documentation system for R, now widely used.

Research Assistant Information Sciences Institute (2005–2008)

Developed multi-agent simulation environments for computational social science.

Projects

Gemini Workshops (2023–) I organize a biweekly Gemini workshop at Google which brings in ~ 350 people per session; and have led workshops on things like [day-trading](#), [fine-tuning for persona](#), [medical triage](#), etc.

Talks and Publications

Danenberg, P. (2024). [What is AI?](#) *Westminster Technology Forum, House of Lords*.

Danenberg, P. (2024). [Learnings on Building Gemini](#). *Imagination in Action, MIT; Forbes*.

Danenberg, P. (2023). [Prompt-Engineering with Bard](#). *Devfest, Google*.

Danenberg, P. (2023). [Single Parameter Driven Tunable Resource Allocation for Machine Learning Tasks](#) (tech. rep. No. 5812). Technical Disclosure Commons, Defensive Publication Series.

Danenberg, P. (2012–2015). Weekly workshops on Artificial Intelligence: A Modern Approach. Russell and Norvig, 2011. *LA Computer Science Reading Group*.

Kahn, J., Danenberg, P., & et al. (2010). Model simulation and decision analysis with the SimR package in R. *The R User Conference*.

Danenberg, P., Marsella, S., Miller, L., Read, S., & Si, M. (2007). Modeling belief- and attitude-change in a coherence-network. *UCLA Lake Arrowhead Conference on Human Complex Systems*.

Education

2004–2008	University of Southern California	Ph.D. candidate, Computer Science (Research Assistant)
2002–2004	Albert-Ludwigs-Universität, Freiburg	Ph.D. candidate, Philosophy
2000–2002	Harvard University	Ph.D. candidate, Comparative Literature
1995–2000	University of Southern California	B.A., Computer Science, Classics, Philosophy, German, Piano

Studied abroad at Cambridge University, Διεθνές Κέντρο Ελληνικών (Athens), Alliance Française (Paris), and Humboldt-Universität (Berlin).

Skills

Skill	Experience	Skill	Experience
C++	9 yrs.	NLU Infrastructure	6 yrs.
Python	8 yrs.	Java	5 yrs.
Full-Stack Development	7 yrs.	AI Prototyping	2 yrs.
TypeScript	6 yrs.	LLMs	2 yrs.