Manasi Swaminathan

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Summary

Founding engineer who likes building things from scratch. For me, success is making something small that did not exist before. I experiment a lot: I turn ideas into quick proofs of concept, keep up with how fast AI is moving, and learn what I need to get new things into the product. At Ren, I build the AI and also own a lot of the product: I make design calls, act as PM, and talk with pilot users and customers about adoption and observability. I'm not afraid of ownership, and I pay close attention to usability, which is also what my research on robots for older adults is about: six papers at CHI, DIS, HRI, and RO-MAN.

Experience

Good Authority (Ren) **Oct 2024 – Present**
Founding AI Engineer *Remote*

- Founding engineer for Ren's AI layer, an AI leadership-coaching platform with 150+ active users. Architected five LangGraph agents (coaching, live-meeting facilitator, anonymous chat) on Claude and GPT, orchestrating a 47-tool library with model-driven tool selection, structured-output routing, and confirm-before-commit flows.
- Built the Python/Quart coach service (Pydantic, REST/SSE streaming, Postgres-checkpointed state) and Ren's MCP layer: coaching tools exposed to external agents like Claude, with a surface-specific tool set (commit tools removed so the host agent asks first), tool-consent records, and a metadata-only call log.
- Designed multi-tenant RAG on Pinecone: per-organization namespaces, per-user filters, and a both-parties privacy filter so memories never leak across users or orgs.
- Cut cold first-turn latency from ∼15s to ∼8s and lowered LLM cost via reworked tool orchestration, prompt caching, and prompt optimization (est. 18–24% fewer input tokens per call; 85–90% lower live-meeting input cost).
- Built the "brain" pipeline (LangGraph, Kafka-fed Slack ingestion) turning workplace conversations into leadership coaching opportunities and morning briefs; parallelizing extraction cut an eight-channel flush from 10+ minutes to 27s.
- Designed the multi-turn coaching behavior evaluated in a 25-scenario study against ChatGPT, Copilot, and Gemini; Ren scored highest on coaching depth (4.2/5), transformation potential (4.4), and tough love (4.5).
- Achieved SOC 2 (policy documentation, Vanta, auditor communication) and GDPR readiness; built anonymous-chat guardrails and a Slack privacy firewall.

Indiana University, Luddy AI Center **Apr 2022 – Oct 2024**
Research Scientist *Bloomington, IN*

- Led development of IRIS, an LLM-powered social robot that supports older adults' sense of purpose (ikigai), with Toyota Research Institute; deployed across 5 centers and homes in the US and Japan.
- Built the Python/ROS backend for real-time conversation, mixing scripted and LLM-generated questions (GPT-3.5/GPT-4) with prompt engineering for personalized, guideline-aligned dialogue.
- Designed RAG and LLM-generated user-profile pipelines that personalize each conversation, updating the profile after every session.
- Ran user studies with older adults and mixed-methods analyses; results published at CHI, DIS, HRI, and RO-MAN (below).

FourKites, Inc. **Aug 2023 – Jul 2024**
Data Science Intern *Remote*

- Led research and design for FourKites' first Generative AI product through development, Beta, and GA, reaching 380+ recurring users across 40 accounts.
- Designed the solution and quality-assurance approach that cut negative feedback 74% (8.2% to 2.1%) before the first major release.

Skills

Languages: Python, TypeScript/JavaScript, SQL, R
LLM & Agents: LangGraph, LangChain, MCP (FastMCP), tool orchestration, structured outputs, RAG, prompt caching, LangSmith, Guardrails AI, Claude and GPT models, Azure OpenAI
Backend & Infra: Quart, Pydantic, REST/SSE, Next.js, PostgreSQL, Redis, Kafka, Pinecone, Docker, AWS, GCP, ROS
Practices & ML: SOC 2/GDPR (Vanta), A/B testing, PostHog, scikit-learn, TensorFlow, AI-assisted development (Claude Code, Cursor)

Publications

- **CHI '25:** "Bittersweet Snapshots of Life: Designing to Address Complex Emotions in a Reminiscence Interaction between Older Adults and a Robot."
- **DIS '25:** "Research as Care: A Reflection on Incorporating the Ethics of Care in Design Research with People Living with Dementia."
- **HRI '24 Companion** (first author)**:** "If [YourName] Can Code, So Can You! End-User Robot Programming For Non-Experts."
- **IEEE RO-MAN '24:** "Let's Talk About You: Development and Evaluation of an Autonomous Robot to Support Ikigai Reflection in Older Adults."
- **HRI '24:** "Give it Time: Longitudinal Panels Scaffold Older Adults' Learning and Robot Co-Design."
- **HRI '24 Companion:** "Is Now a Good Time? Opportune Moments for Interacting with an Ikigai Support Robot."

Education

Indiana University Bloomington, Luddy School of Informatics, Computing, and Engineering **Bloomington, IN**
Master of Science, Computer Science

Rajalakshmi Engineering College, Anna University **Chennai, India**
Bachelor of Science, Information Technology