Raymond Fok

AI+HCI Researcher • Software Engineer
AI, Human-Computer Interaction (HCI), Natural Language Processing (NLP)

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Education

Ph.D., Computer Science & Engineering • University of Washington, Seattle — Sep 2019 – Jun 2025 (*expected*)
Thesis: *Human-AI Systems for Augmenting Information-Driven Knowledge Work*
Advisor: *Daniel S. Weld* • Committee: *Amy X. Zhang, Andrew Head, James Fogarty*

B.S., Computer Science, Minor in Mathematics • University of Michigan, Ann Arbor • *GPA*: 3.91 / 4.0 — Sep 2016 – Jun 2019

Experience

University of Washington — Seattle, WA

Graduate Research Assistant — Sep 2019 – Present

- Authored and presented **10+ research papers** at top-tier HCI and AI conferences (CHI, UIST, IUI, EMNLP, AI Mag).
- Developed and evaluated **novel AI mechanisms** and **intelligent, interactive systems** in exploring **human-AI interaction**.

Allen Institute for Artificial Intelligence (Ai2) — Seattle, WA

Research Intern and External Collaborator (Semantic Scholar) — Mar 2023 – Present

- Built LLM workflows for automated and human-AI synthesis of scientific literature. Contributed to post-training and evaluation of open-source LLMs for various literature synthesis tasks (EMNLP '24, CHI '25, In Sub.).
- Implemented an interactive system for a novel interaction paradigm of *recursively expandable summaries*, using **retrieval-augmented LLMs**. Conducted technical and user evaluations, and published papers (UIST '24, EMNLP '23).

Research Intern (Semantic Scholar) — Jun 2021 – Sep 2021

- Developed **interactive system with AI-powered, faceted highlights** to support skimming of research papers (IUI '23, TiiS '24).
- Implemented and evaluated NLP model by collecting a dataset of salient faceted sentences from domain experts, using **weakly supervised learning** methods, and **fine-tuning LMs** (BERT, MiniLM).
- T**ransferred research prototype into production** (*skimming highlights*; Oct 2023) in Semantic Scholar's Semantic Reader with 7M+ MAUs.

Adobe Research — San Jose, CA

Research Intern (Document Intelligence) — May 2023 – Sep 2023

- Developed an **LLM-enabled computational notebook** for accelerating business tasks, focused on *collection-centric* **information extraction, question answering, and synthesis**. Ideas served to **inform multi-document functionality in Acrobat AI Assistant** (CHI '24).

Google Research — Mountain View, CA

Research Intern (Gboard) — Sep 2021 – Dec 2021

- Experimented with **multi-modal models** for gesture typing recognition (TensorFlow, Keras), combining LSTMs for gesture trace data with language modeling over prior phrase context, improving word prediction accuracy by 5% over existing approaches.

Software Engineering Intern (Central Accessibility) — Jun 2020 – Sep 2020

- Designed, prototyped, and implemented (Java) an **interactive color correction mechanism** for the Android Accessibility Scanner.
- Released productized feature into the Accessibility Scanner app with 1M+ downloads on Google Play store.

Academic Publications (Selected)

(See Google Scholar for full list of publications • Citations: 1,170)

- **Scholarly Communication:** Developed **interactive, AI-powered systems** for faceted exploration (IUI '23, TiiS '24), in-context information retrieval (UIST '24, EMNLP '23), and structured synthesis (EMNLP '24, In Sub.) of research literature, using methods from fine-tuning language models (LMs) to retrieval-augmented generation (RAG) with LLMs.
- **Sensemaking:** Developed a **retrieval-augmented LLM-enabled computational notebook** for collection-level exploration over business documents, and evaluated with technical and user studies (CHI '24, CHI '25).
- **Explainable AI:** Conducted studies to **characterize the impact of explainable AI on decision-making** via large-scale crowdsourced experiments (CHI '21) and developed a theoretical framework from comprehensive lit review (AI Mag '24).

Skills

Programming Languages: Python, TypeScript, JavaScript, HTML/CSS, SQL, Java

Platforms/Tools: Flask, React, LangChain, PyTorch, TensorFlow, Keras, Transformers, NumPy, Scikit-learn, Faiss, PostgreSQL, Git

Research Methods: Mixed-methods experimentation, Quantitative analysis and statistical modeling, Qualitative analysis, Usability testing, A/B testing, Contextual inquiry, Deployment studies, Diary studies, Prototyping

Relevant Coursework: Natural Language Processing, Machine Learning, Deep Learning, Data Mining, Big Data Machine Learning, Information Retrieval, Complex Analysis, Algorithms, Data Visualization, Advanced Topics in Human-Computer Interaction