

SUMMER EUNHYUNG ANN

PhD Student, Computer Science - University of Chicago

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Multi-agent systems / AI safety / scientific AI / LLM evaluation / biomedical machine learning

EDUCATION

PhD, Computer Science

University of Chicago

- Advisor / PI: Chenhao Tan (since 2026). GPA 3.98/4.00; full-ride scholarship.

2024 - Present

Chicago, IL

BS, Computer Science & Biology, University Honors

University of Michigan - Ann Arbor

2021 - 2024

Ann Arbor, MI

SELECTED PUBLICATION

The Interaction Tax: When Communication Erases Diversity in Multi-Agent Teams

2025 - 2026

Summer Eunhyung Ann, Haokun Liu, Chenhao Tan | First author | ICML 2026 Workshop

- Across 11 verifier-scored optimization tasks under matched budgets, showed that unrestricted full-solution exchange can collapse cross-model diversity, while independent proposals preserve coverage and often perform better.

[arXiv](#) | [Code + data](#)

RESEARCH EXPERIENCE

Researcher

University of Chicago - Chenhao Tan Group

2026 - Present

Chicago, IL

- Research multi-agent systems, AI safety, scientific discourse, agent behavior, and evaluation; design experiments and research infrastructure for studying coordination, communication, and interaction effects.
- Current work includes false-belief propagation through shared agent memory, causal/observational analysis of discussion quality across 39K+ comments, and user influence on behavior in AI-only online social systems (CHI 2027 in preparation).
- Build scientific-agent infrastructure through [Agent4Science](#) and [Flamebird](#), a persistent runtime for reproducible long-horizon research workflows.

[Research portfolio](#) | [Agent4Science](#) | [Flamebird GitHub](#) | [Flamebird npm](#)

Researcher

University of Chicago - Data Commons / Grossman Lab

2024 - Present

Chicago, IL

- Work on AI-driven immune receptor modeling, large-scale biomedical data pipelines, and reproducible curation and quality-control workflows for AI-ready immune receptor datasets.

Research Collaboration - ProtoECGNet / EchoNext

2025

Collaboration with Beaulieu-Jones Lab, University of Chicago

- Adapted prototype-based ECG models to the EchoNext cardiac dataset for interpretable structural heart disease classification, including embedding analysis and prototype-drift monitoring. This was a collaboration, not a lab affiliation.

Contributor - Immune TCR Dataset Curation

2024 - 2025

CZ Biohub Chicago

- Curated paired TCR alpha/beta sequence datasets from public sources for clean, model-ready immunology data and downstream protein-language-model research.

Undergraduate Research Assistant

Michigan Medicine - Boyle Lab, University of Michigan

2022 - 2024

Ann Arbor, MI

- Applied the SEI framework to short tandem repeat (STR) genomics for disease classification, combining machine learning with regulatory-activity prediction across 21,907 chromatin profiles.

Research Fellow - DIY Eye Tracker & Attention Games

Summer 2023

Backyard Brains Fellowship

Belgrade, Serbia

- Built an accessible DIY eye tracker and three open-source web applications for public engagement with gaze, attention, and perception research.

Research Assistant

University of Michigan - Mishina Lab

2021

Ann Arbor, MI

- Conducted biomedical research in the Mishina Lab, contributing to an early research foundation in disease biology and experimental science.

TEACHING EXPERIENCE

MPCS 53113

Natural Language Processing

Summer 2026

MPCS 53110

Foundations of Computational Data Analysis

Spring 2026

CMSC 35440

Machine Learning in Biology and Medicine

Winter 2026

SI 649 / EECS 548

Information Visualization

University of Michigan

Guided students in Python-based machine learning/data pipelines, visualization, and technical problem solving.

TECHNICAL EXPERIENCE

Co-CTO

Jun 2025 - Present

Concord Systems Corp.

Remote

- Integrated Fireblocks MPC approval flows for transaction signing, reducing end-to-end approval latency by ~40% and failed-signature incidents by 25%.
- Designed trade execution types and predictive models that reduced simulated frontrunning and adverse selection by 18% on historical order-book replays.
- Built real-time MPC transaction-coordination tooling that increased internal benchmark throughput from ~50 to 200+ signed transactions/second.

Co-Founder

Jan 2025 - Present

DevSecCode, Inc.

Remote

- Architect and build Deva, an AI-native secure coding and compliance platform combining rule-based scanning, AST-aware analysis, local reachability analysis, dependency/dataflow enrichment, calibrated confidence metadata, and LLM-assisted remediation.
- Built security/compliance workflows spanning HIPAA, SOC 2, PCI DSS, NIST 800-53, CWE/CVE classes, SARIF, and OSCAL outputs, with local and regulated-environment deployment requirements.
- Developed editor-centered workflows that surface findings while code is written and preserve context through validation, remediation, control mapping, and evidence generation.

LLM / Data Engineer

May 2024 - Present

Neuromuse.ai

Remote

- Integrated instruction-tuned LLMs into a natural-language-to-music stack with modular prompting and post-processing for style, tempo, and instrumentation control.
- Built evaluation pipelines combining semantic/lexical metrics with human preference studies, improving on-brief generation quality from 72% to 88%.
- Implemented text-audio dataset curation/deduplication and retrieval-augmented workflows for creator-specific conditioning without retraining the base model.

AI/ML Solutions Architect Intern

May - Sep 2024

Amazon Web Services (AWS)

Seoul, South Korea

- Designed and implemented ZON, an AWS Bedrock scheduling assistant for multi-step calendar reasoning and constraint satisfaction across time zones.
- Compared prompt engineering with function/tool calling for calendar operations, reducing invalid-timeslot and missing-constraint failure cases by ~30%; built structured logging, telemetry, and user-feedback loops that reduced hallucinated events.
- Deployed an EC2/OAuth 2.0 architecture tested at 10K+ concurrent sessions with sub-200 ms median orchestration latency in load tests.

INDEPENDENT PRODUCT ENGINEERING

Summit Wanderlust, LLC & Open Source

- Designed and shipped mobile/web products including Yammoing, BreatheMindful, Lovocado, My Little Chef, MyPlanner, CreatorFlow AI, With You, and CashCart across SwiftUI, HealthKit, Flask, Next.js, Prisma, NextAuth, Docker, and local/RAG-based AI workflows.
- Built end-to-end product systems spanning on-device privacy, API/backend design, natural-language scheduling, recommendation/search workflows, analytics, and App Store delivery.

SELECTED TECHNICAL PROJECTS

Multithreaded Stock Trading System: C++20 matching-engine simulation with multithreaded traders/order books; benchmarked 100K+ orders/second with near-linear scaling to 8 threads.

LLM Probing for Code Semantics vs. Syntax: Constructed AST-preserving vs. semantics-altering probing datasets and hybrid subspace probes for code-model representation analysis.

TCR-GraphDiff: Built graph-neural-network pipelines for TCR sequencing analysis and curated immune-receptor datasets for downstream modeling.

Domain Adaptation for Cancer Classification: Compared general-purpose BERT and PubMedBERT representations with stratified/nested evaluation and calibration analysis on biomedical classification.

Transformer-Based Financial Text Analysis: Implemented a GPT-2-like transformer in PyTorch/einops for earnings sentiment and downstream trading analysis.

RL-Based Trading Strategy Optimization: Built Q-learning/DQN trading experiments with ablations over state representations and reward shaping.

Stock Price Movement Prediction: Built SVM/KRR directional models and K-Means stock-grouping experiments for quantitative portfolio analysis.

Explainable AI Tools for Education: Developed transparent ML/interpretability tools for classroom studies and co-authored research on explanation-supported learning.

Hummingbot: Contributed exchange-connector and multi-venue strategy work for algorithmic/high-frequency trading experiments.

SKILLS

Languages: Python, C++, SQL, R, MATLAB, Java, JavaScript/TypeScript, Swift

ML / Research: PyTorch, PyTorch Geometric, PyTorch Lightning, TensorFlow, Hugging Face, scikit-learn, NumPy, pandas, Optuna, NetworkX, LangChain, OpenAI Gym, Qiskit, einops; LLM evaluation, causal inference, experimental design, bioinformatics

Systems / Product: Docker, Node.js, Flask, Next.js, Prisma, SwiftUI, HealthKit, RAG, persistent agent runtimes, distributed/async workflows

Cloud / Languages: AWS Bedrock, SageMaker, Lambda, EC2 | Korean (native), English (native), German (professional/C1)