Nange Hai (Aiden)

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EDUCATION

University of California, Irvine

B.S. in Cognitive Science & B.S. in Informatics (HCI), Minor in Computer Science *09.2022 - 06.2026*

- **GPA:** 3.99/4.0 **Honor**: Phi Beta Kappa Honor, Dean's Honor List (9 consecutive quarters)
- **Relevant Coursework:**
  - *UI/UX & Engineering*: UI/UX Project, Web Dev Project, Software Design, Software Testing, Project Management
  - *Programming & CS*: Python, Java, C++, MATLAB, R, Computer Architecture
  - *Data & ML/AI:* Data Analysis, Data Visualization, Probability & Inference, Statistical Learning, Statistical Models, Cognitive Models, Machine Learning & Data Mining, Data Structures & Algorithms, AI Software Engineering

PROJECT

ImpactStudio | Capstone Project | Multi-Agent Systems, RAG, Fine-Tuning, Python, LLMs, UX Design *09.2025 - Now*

- Designing an AI companion platform to assist screenwriters and studio heads in both evaluating alignment between scripts and core studio values, and supporting the creative, coherent and cohesive writing process.
- Building two core models: (1) a fine-tuned LLM (Mission Keeper) grounded in custom principles and prior scripts, and (2) a retrieval-augmented generation (RAG) module with structured vector memory.
- Architecting a multi-agent workflow where memory and knowledge modules jointly inform the model's output quality, contextual consistency, and alignment with user and studio goals.
- Developing a multimodal interface for real-time user input (text, files, speech) and traceable model reasoning, making system behavior easier to understand in each step, enabling transparent, human-AI collaboration.

UCI TreeHole | Team UX&Web Project | React, TypeScript, Figma, User Research *04.2025 - Now*

- Built an anonymous platform that allows creating posts, browsing live feeds, and responding with reactions and comments.
- Moved from wireframes, hi-fi prototype to delivered website and wrote annotated specifications that map screens to routes, components, and data flows.
- Defined testable task scenarios for posting and browsing, ran short usability sessions, and turned the observations into fixes such as clearer empty states and more direct entry points to posting.
- Outlined a simple post-release plan to watch task completion, time to first useful action, and common drop-off points, and tied design changes back to observed user evidence.

Career Support App | Team UX Project | Figma, User Research, Design Testing *01.2025 - 03.2025*

- Designed a student career support web application for anonymous help and timely resume feedback, and set measurable goals for finding the right community, posting a question, and submitting a resume for review.
- Conducted competitive analysis of current job-seeking platforms, and interviewed senior-level undergraduates, then turned the patterns into two personas and clear questions the product must answer.
- Built task-focused prototypes and moderated short studies; after revisions, more people reached an appropriate community, completed a forum post without confusion, and completed a full help-seeking flow with clearer steps and fewer points of ambiguity.
- Set a simple evidence loop for later releases that records task completion, time to finish key steps, click paths, and points where people stop, and ties each change in the design to the behavior patterns we observed.

Robotic Dragonfish | Robotics Project | Python, Cognitive Modeling, Experimental Design, Data Analysis *10.2024 - 12.2024*

- Built a biologically inspired robotic dragonfish that demonstrates hunger-driven foraging, defensive retreat, obstacle avoidance, and exploratory navigation via modular state transitions.
- Implemented a satiety-based probabilistic model using sigmoid functions to control prey capture likelihood and trigger behavior transitions over time.
- Ran controlled trials to record capture rates, avoidance success, and transition timing; observed prey capture dropping from 100% to ~9% as satiety increased.
- Analyzed behavioral data to tune control parameters for more stable and predictable real-world performance, and explored how simple neural-like rules generate adaptive but still interpretable patterns.

RESEARCH EXPERIENCE

Research Assistant
UC Irvine CARL *09.2024 - Now*

- Built a cuttlefish-inspired robotic agent by connecting visual detection, memory retrieval, and action selection into a working control system. Combined reinforcement learning with a simple episodic-like memory so the robot could adjust its foraging and avoidance behavior based on prior events.
- Designed a compact "what-when-where" memory structure to encode spatiotemporal event relationships and support probabilistic retrieval that drives flexible action planning.
- Simulated predator-prey environments to analyze decision shifts under uncertainty, achieving over 90% predator avoidance and long-term adaptation over 200+ learning episodes.
- Applied cognitive modeling concepts to guide engineering decisions, focusing on simple, interpretable mechanisms that support adaptive behavior in real robotic systems.

Research Assistant
UC Irvine LDNLab *09.2023 - 09.2024*

- Supported studies on social influence and confidence calibration, focusing on behavioral patterns that inform later computational modeling.
- Configured and maintained online experimental platforms to ensure smooth participant flow, clear task instructions, and reliable data capture, building a foundation for clean, model-ready datasets.
- Observed participant interaction patterns and reported usability issues, helping refine task instructions and reduce confusion during testing, linking human behavior to clearer experimental signals.
- Verified collected data for completeness and consistency before analysis, improving dataset accuracy for modeling group decision processes and strengthening the reliability of downstream statistical inference.

WORK EXPERIENCE

UI/UX Design Intern
My Rental Spot *07.2025 - Now*

- Led the full design of the Business Search Page, starting from early requirements and success metrics to high-fidelity prototypes and production delivery. Worked closely with engineers to make sure design and backend logic matched.
- Conducted task-driven usability iterations that increased user flow completion rate and reduced interaction time to under 30 seconds. Built a light monitoring setup that tracked usage patterns, drop-offs, and common errors after release.
- Designed and modeled the full contractor & PM payment workflow, covering state transitions (draft to complete), fund logic (escrow, release, refund), milestone validation, and dispute handling. Translated backend system behavior into multi-role UX with robust status feedback and exception resolution.
- This experience sharpened my ability to structure system logic for real-world use cases, aligning technical workflows with user-facing clarity and reliability.

Peer Academic Advisor
UC Irvine School of Social Sciences *04.2024 - Now*

- Supported over 300 students with course planning, policy questions, and long-term academic decisions through structured problem-solving.
- Translated complex requirements into clear, goal-oriented plans that students could follow without confusion
- Identified gaps in advising communication and proposed solutions to improve advising clarity, efficiency, and records accuracy.
- Learned to communicate with clarity and patience in situations that often involve stress or uncertainty. These skills translate directly to teamwork, debugging, and technical communication in engineering settings.

SKILL & OTHER

Programming: Python, Java, C++, SQL, JavaScript, TypeScript, R, Matlab
Software, Systems & Tools: Git; Docker; ROS2; HTML/CSS, Figma, React, Node.js, RESTful API; MongoDB
Machine Learning & Data: NumPy, Pandas; Scikit-learn, PyTorch, Tensorflow, OpenCV, Jupyter, LangChain, RAG, LLM fine-tuning (unsloth), LLM models (Llama, GPT-4o, gemini-2.5-flash), Data Pipelines
Learning & Teaching: Learning Assistant *(Discrete Math, 2023 Fall)*; Grader *(Judgement, 2025 Fall & Probs., 2026 Winter)*