

# Nicholas Yeung

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## EDUCATION

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### University of Wisconsin, Madison

Bachelor of Science in Computer Science & Data Science; GPA: 3.62

Madison, WI

Aug. 2022 – May 2026

## EXPERIENCE

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### Software Engineer Intern

Cornell Communications

June 2024 - August 2025

Milwaukee, WI

- Built a real-time floor plan and patient alert visualization feature in React and React Native using Mapbox GL, increasing alert-response speed by 25% in nursing homes.
- Developed a full-stack app using Django, PostgreSQL, and Microsoft Graph API to sync nursing home events across platforms; deployed via Gunicorn and Nginx on an internal Linux server.
- Created minimal Linux images using Yocto to optimize performance for resource-constrained embedded systems in patient care facilities.

## PROJECTS

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### MottoNote | [Next.js/React](#), [TypeScript](#), [Firebase](#), [Cloud run](#), [Vertex AI](#), [LangChain](#) November 2025 – Present

- Building an AI-powered knowledge platform for venture capital teams, centralizing emails, documents and meeting notes from Gmail, Slack, Notion, and Zoom into a unified search interface with OAuth 2.0 authentication, deployed to an enterprise pilot customer.
- Engineered a hybrid RAG pipeline combining dense vector search with sparse keyword matching via reciprocal rank fusion, delivering real-time streaming AI responses over SSE.
- Designed a scalable backend with a core TypeScript monolith, modular cloud function microservices, and Cloud Run workers for document ingestion and embedding generation, with test-driven development across the full stack.

### Reels TUI | [Go](#), [FFmpeg](#), [ChromeDP](#) | [GitHub](#)

March 2026

- Published an open-source TUI for streaming Instagram Reels with 500+ installs across npm, Homebrew, and AUR, featuring audio-clock A/V sync and rendering via Kitty graphics protocol.
- Engineered a ChromeDP backend with network-layer GraphQL interception to capture reel data without API calls, backed by a FIFO disk cache with concurrent download deduplication and optimistic prefetching.

### Piazza Bot | [Go](#), [Python](#), [Cassandra](#), [Kafka](#), [Redis](#), [Docker](#), [gRPC](#) | [GitHub](#)

December 2025

- Built a distributed RAG system across a 2-node Docker Swarm with dedicated GPUs, processing 700+ forum posts and 35+ hours of lecture transcripts with timestamped citations accurate to 20 seconds of source material.
- Designed a self-hosted multi-agent QA pipeline with context-window expansion, where subagents evaluate retrieved chunks in parallel with hallucination guardrails that filter 85% of unanswerable posts.
- Developed a DP-based semantic chunking algorithm with O(1) prefix-sum scoring, co-optimizing cosine similarity and token length; published as a standalone Go library.

### HoppyShare | [AWS](#), [Go](#), [Redis](#), [Kotlin](#), [Objective-C](#), [C++](#), [Flask](#), [Docker](#), [MQTT](#), [BLE](#) | [GitHub](#)

July 2025

- Engineered a cross-platform clipboard and file sharing system with end-to-end encryption and mutual TLS authentication, supporting transfers across Windows, macOS, Linux, and Android.
- Built a modular backend with AWS Lambda for device on-boarding, a Mosquitto MQTT broker on EC2 with Flask API enforcing ACL and CRL-based access control, and Redis for session management.
- Developed native desktop clients in Go with C++ and Objective-C bindings for offline Bluetooth Low Energy fallback, with OS keychain integration and system tray background services.

### Perp (Y Combinator Agent Jam 2025 Winner) | [Typescript](#), [Next.js](#)

November 2025

- Won Y Combinator's Agent Jam 2025 (Unsiload) by building a real-time meeting AI agent that captures context, decisions, and action items across the full meeting lifecycle.
- Integrated Slack, Zoom, and Notion to surface relevant documents and past decisions during live conversations.

## TECHNICAL SKILLS

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**Languages:** JavaScript/TypeScript, Go, Python, C, Java, C#, SQL, HTML/CSS, R

**Frameworks:** React, Next.js, Node.js, Angular, React Native, Django, Flask, .NET, Tailwind

**Infrastructure:** Docker, AWS, Firebase, GCP, Azure, Kafka, Redis, Cassandra, MQTT

**Developer Tools:** Git, CI/CD (Github Actions), Linux, Vercel, Claude Code, VS Code