

# JUSTIN KIM

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## Education

### University of Wisconsin, Madison | GPA: 3.76

Bachelor of Science in Computer Science & Data Science

Expected Graduation: Dec 2026

Madison, WI

- Courses: Artificial Intelligence, Distributed Systems, Algorithms, Big Data Systems, Databases, Computer Networks

## Work Experience

### Capital One

Incoming Software Engineer Intern (TIP)

June 2026 – Aug 2026

Chicago, IL

### Entegral

Full Stack Software Engineer Intern

May 2025 – Aug 2025

Madison, WI

- Built production features in an Agile team, including a Pub/Sub listener for RDS events to enable real-time sync across estimate negotiation services, improving coordination and reducing update delays across internal tools.
- Spearheaded the intern capstone to develop a guided image capture system with ML validation that guides accident victims in taking photos and answering questions, enabling insurers and body shops to process repairs.
- Created an OCR module being productized as a reusable component across multiple Entegral applications.

### Denari

Feb 2025 – May 2025

Software Engineer, Capstone Project

Madison, WI

- Built a RAG pipeline using OpenAI embeddings and TimescaleDB for low-latency, citation-grounded retrieval.
- Improved benchmark accuracy by 5% over GPT-4o-mini on 2,200+ CPA exam questions in under 30 minutes.
- Configured S3 and IAM policies to securely manage 50K+ tax documents and improve retrieval speed.

### Astro AI Trading

Jan 2024 – Dec 2024

Machine Learning Engineer, Promoted from Data Science Intern

Remote

- Led a team of 3 to build sentiment-driven stock prediction models, achieving 78% R<sup>2</sup> on 1-week forecasts.
- Architected an NLP pipeline with BERT, PCA, and KMeans to cluster unlabeled text by sector with 77% accuracy, enabling routing to domain-specific sentiment models for targeted predictions.

## Projects

### MadLease | Website

Spring Boot | React | PostgreSQL | Docker | AWS

- Created and deployed a sublease platform for UW-Madison students to find housing and connect with peers.
- Assembled AES-256-GCM encrypted chat system with real-time UI and PostgreSQL-backed message storage.
- Implemented TanStack Query for efficient caching and real-time updates, reducing redundant API calls by 50+%.
- Deployed secure image upload system with S3 presigned URLs and Dockerized backend for cleanup and caching.
- Integrated Firebase Auth with Google OAuth and token verification with sub-250ms response times.

### QuizClash | Devpost | Source Code

NodeJS | React | WebSocket | AWS

- Developed a real-time multiplayer quiz app with WebSocket-powered sessions, converting PDFs and video URLs into Kahoot-style games with contextual explanations, live scoring, room matching, and flexible settings.
- Engineered ML pipeline using OCR, HuggingFace T5, and Sense2Vec with MMR-based sampling to generate diverse, semantically relevant questions and distractors, achieving 77% relevance precision in testing.
- Installed AWS S3 storage for PDFs, videos, ML outputs, and status files with automated cleanup across sessions.

## Technical Skills

**Languages:** Python, Java, JavaScript, TypeScript, C, SQL, HTML5, CSS

**Developer Tools:** Git, Docker, AWS (S3, EC2, IAM), Postman, Jira, WireMock, Pub/Sub

**Libraries/Frameworks:** React, Spring Boot, Node/Express, PostgreSQL, Flask, PyTorch, Angular, Scikit-Learn

**Concepts:** Machine Learning, Full Stack Development, Backend, Frontend, Data Science, Agile Methodologies