

Heejae Kim · Software Engineer

happyhj@gmail.com · happyhj.github.io · linkedin.com/in/heejaekm

SKILLS React, Python, TypeScript, System Design, Observability (metrics/alerts), Accessibility (WCAG), WebGL, CI, Test Automation, Gen AI, LLM, HCI, Design Systems, Performance Optimization

PROFESSIONAL EXPERIENCE

AMAZON WEB SERVICES - SDE II, 5 YEARS

Seattle, WA

Amazon Bedrock - Guardrails

Aug 2024 - Present

- Decoupled Guardrails Console components, reducing code review delay by 50% by getting rid of core team dependency.
- Designed backend logic simplification for Gen AI guardrails in Bedrock Inference API, enabling scalable, config-driven onboarding of 100+ models across modalities. Partnered with multiple modality owners to validate cross-model compatibility and ensure zero-regression delivery for Reinvent 2024 launch.

Amazon SageMaker Data Wrangler & Canvas

Sep 2022 - Aug 2024

- Solved critical "Page not responding" errors blocking analysis of 19+ column datasets by transforming rendering from $O(N)$ to $O(1)$ complexity
- Led DataWrangler to Canvas migration, ensuring seamless integration of complex data transformation features while maintaining UI consistency
- Reduced initial render time by 97% (10.5s to 0.4s) through systematic React optimizations: React.memo on visualization components, useCallback for event handlers, and render-on-scroll for DataGrid instances
- Pioneered Storybook integration for component documentation, reducing QA cycles by 50% and accelerating dark mode development by 3 weeks
- Cut bundle size by 41% (75MB to 44MB) through dependency analysis and package consolidation, directly impacting load performance

Amazon S3 Console

Apr 2021 - Sep 2022

- Partnered with UX team through Figma and InVision to implement Lifecycle Filters and Inventory ACLs, resolving 15+ design concerns including size boundary clarity and unit ambiguity issues
- Prevented data loss risks by implementing comprehensive form validation across 20+ components with contextual error messages
- Benchmarked client-side checksum libraries (MD5, SHA256, CRC32), identifying 25% performance degradation and proposing WebCrypto API solution

NAVER CORP

Seoul, South Korea

NSMLxAutoML & AI Incubator Team, Clova AI

May 2018 - Aug 2020

- Developed a full-stack system integrating Active Learning and Human-in-the-Loop workflows with synthetic labels from image classification models, scaling datasets and improving model accuracy.
- Developed TurtleTalk prototype using Web Speech API and Google Translate API for voice-controlled programming education

Front-End Platform

Jan 2015 - Apr 2018

- Created 360 viewer using WebGL and device motion APIs, achieving 531 GitHub stars and 5K+ weekly NPM downloads
- Implemented drift correction algorithm combining low-level and high-level motion APIs for stable mobile experience
- Secured adoption by **Amazon.com automotive showroom** and **Hyundai**.

RESEARCH

DIMENSIONAL ALT TEXT: ACCESSIBILITY INNOVATION

ACM CHI 2023

- Implemented prototype allowing screen reader users to navigate image descriptions at multiple spatial detail levels

TURTLETALK: VOICE-DRIVEN EDUCATIONAL PROGRAMMING GAME

ACM CHI 2019

- Designed and built a full-stack prototype integrating voice UI and machine translation in the browser to teach kids programming concepts (sequencing, iteration).

INNOVATION & RECOGNITION

- **Hackathon to Patent Success:** Won 1st place at NAVER CV API Hackathon (2018) for 360° object detection UI with radar minimap; innovation led to granted patent "Method for Visualizing Subject Information in 360° Media" (2019)
- **2nd Prize, WebRTC Competition (2016):** Built browser-based P2P file sharing with real-time UI updates

PUBLIC SPEAKING

- **DEVIEW 2017** - "Building Cross-Platform 360 Viewer with WebGL" (200+ attendees)
- **NAVER Open Source Seminar** - Open source project maintenance strategies

EDUCATION

NATIONAL INSTITUTE OF LIFELONG EDUCATION
Bachelor of Engineering, Major in Computer Science

South Korea