Mark Hyunik Choi

> Seoul, South Korea
>
> https://www.markhyunikchoi.com/
>
> https://cerebrarium.garden/
>
> hikchoi@gmail.com

Profile

While the domain and area of development varies in my professional work, my primary goal is to ultimately build tools that can empower users, and more importantly, myself.

Therefore, I approach problems from a user-centric point of view and build what is necessary in solving that problem. At the same time I work hard to facilitate the process of building said tools, empowering myself and my team along the way.

As a result, I do not limit my voice to the specific tasks I am given and responsible for. I try to observe and understand how each piece of the puzzle serves the goal while also pondering over better ways to cut out those puzzle pieces.

Skills

Languages	Javascript, Typescript, Python, SQL
Frontend	React, NextJS
Backend/API Design	Flask, FastAPI, NestJS, express, OpenAPI(Swagger)
Database	Postgres, RDS/Aurora, sqlite, prisma
Cloud/DevOps	Docker, AWS, AWS CDK, Terraform
AI	OpenAI, langchain, llama-index
Others	HCI, Research, UX design, Strong communication, Agile
Languages (spoken)	English (bilingual), Korean (native)

Profressional Work

Software Engineer, Dendron Inc

> Location: Remote
>
> Duration: Jan 2021 - May 2021 (OSS), July 2021 - May 2023 (Full-time)

With an endless passion for creating tools for thought, I embarked on my journey with Dendron first as an open-source contributor, which eventually turned into a full-time role. I took ownership of critical aspects within Dendron with a diverse range of responsibilities, orchestrating the end-to-end development process. This includes crafting an intuitive user experience and compelling presentation, architecting the backend logic, driving continuous enhancements, and providing concise documentation. As a member of a fully remote team, I leveraged my strong communication skills to play a vital role in standardizing documentation processes to improve efficiency of an async, documentation-first team.

Achievements

- Designed, implemented, and improved core features of Dendron.
  - Leveraged user centered design to identify and craft a seamless UX of critical features of Dendron.
  - Optimized backend logic to facilitate knowledge management at scale, enabling management of thousands of notes to be performant and effortless.
  - Created a full spectrum of test suites to ensure correctness and performance of core features end-to-end.
  - Instrumented core features of Dendron at various level that enabled the team to discover faults quickly, as well as to give insights that were used for data driven improvements on Dendron.
- Designed and implemented APIs to be consumed internally for AI/ML operations
  - Designed and implemented internal API service using python for various internal AI/ML operations that leveraged OpenAI, langchain, llama-index, and various vector stores.

    - Designed and implemented internal API service using Typescript for integrating AI/ML operations to various core business logics using nestjs
- Streamlined workflows for developers
    - Optimized the development process for team members by employing efficient toolings that enhances DX, ranging from fast and performant build pipelines, testing, and continuous integration and delivery.
- Developed internal processes for the team to communicate efficiently.
    - Create Standard Operating Procedures (SOPs) for tasks and responsibilities that all team members share, to ensure consistent communication.
    - Authored and maintained user guides of Dendron's core features, technical specifications for the team as well as open source contributors, and internal notes in order to facilitate efficient knowledge transfer to team members.

Software Engineer, Tanker Inc. (Formerly known as Tanker Fund)

> Location: Seoul, South Korea
>
> Duration: Jan 2018 - June 2021

Tanker Inc. is a property tech company specializing in providing a wide range of services for financial institutions, real estate agencies, and property owners. I took responsibility in various aspects of the core backend systems that provide the services, as well as managing internal operations and supervision.

Achievements

- Designed, implemented, and maintained core public / private services that serve real estate data.
    - Built real estate valuation systems backed by public data used in financial institutions, to enable expedited mortgage backed loan processing.
    - Designed and built APIs and client software that enabled performant retrieval and analysis of wide range of publicly available real estate data.
    - Built microservices that provided various automated tasks to help brokers as well as participating parties in real estate transactions.
- Designed, implemented, and maintained internal workflow management tools to enhance operational efficiency
    - Designed frameworks and pipelines to manage peer-to-peer collateralized residential mortgage loans used by the internal risk management team.
- Managed and improved DevOps pipelines
    - Standardized infrastructure using Terraform to manage cloud resources, leading to transparent and efficient management of AWS resources
    - Minimized cost of maintaining cloud infrastructure in AWS without sacrificing scalability and resiliency by carefully orchestrating instances and employing right-sizing techniques.
- Led early effort of standardized internal operations
    - Documented and standardized large in-house APIs across hundreds of routes, enabling spec-first development
    - Established and emphasized a documentation-friendly working environment and contributed various operational standards and methodologies to efficiently transfer knowledge.

    - Promoted effective communication methodologies that improved communication quality.
- In charge of onboarding and mentoring to new team members
    - Developed standard procedures to expedite the process of getting new members up to speed with the team's culture, workflow, and knowledge.

Relevant links

- doczip
    - Real estate data provider service (Korean)
- blitz
    - Real estate valuation service (Korean)

Software Engineer, Project Manager, MINDsLab

> Location: Pangyo, South Korea / New Jersey, USA
>
> Duration: May 2016 - Sept 2016

MINDsLab specialized in AI/ML, specifically in natural language processing, and Speech-to-text technology. At MINDsLab, I was in charge of managing a team of data scientists and software engineers to deliver a integrated VOC(voice-of-customer) system to a very large international electronics company.

Acheivements

- Delivered an integrated ERP system for the VOC department of an undisclosed client.
    - Managed a team of data scientists and engineers to develop a pipline for data collection, storage, management, analytics, and decision making over a verly large speech recording corpus.
    - Took ownership of collecting and maintaining datasets for supervised deep learning based STT and text analysis.
    - Worked with UX designers and engineers to deliver a a seamless user interface of the integrated system.

Undergraduate Research Assistant, Human-Computer Interaction Lab, University of Waterloo

> Location: Waterloo, Ontario
>
> Duration: Jan 2014 - May 2014

Human Computer Interaction lab is a research lab at the University of Waterloo. The lab focuses primarily on mixed reality, input device, interaction techniques, info-vis, crowdsourcing, and robotics. Under co-supervision of Prof. Edward Lank and Prof. Daniel Vogel, I worked as an undergraduate research assistant in charge of running controlled studies to assess performance of a novel interaction technique.

Acheivements

- Ran and recorded controlled studies assessing peformance of a novel and enhanced “Pinch-to-Zoom” technique called “Pinch-to-Zoom-Plus (PZP)”.
- PZP is an extension to the standard pinch-to-zoom gesture in touch devices that reduces clutching and panning.
- As a member of the lab, I participated in weekly lab meetings and delivered study data that resulted in a published paper in UIST 2014.

Relevant links

- Pinch-to-zoom-plus: an enhanced pinch-to-zoom that reduces clutching and panning

Education

Candidate for Master of Industrial Design

> Location: Daejeon, South Korea
>
> Duration: 2015
>
> Korea Advanced INstitute of Science and Technology (KAIST), Department of Industrial Design, I2dea Lab (currently known as SketchLab) - Incompleted, leave of absence from graduate studies to treat an unforeseen illness (2015 - 2017)

I2dea Lab is a research lab at KAIST, Department of Industrial Design, where the primary focus of research is innovation of design processes and developing novel interaction techniques for designers. Under supervision of Prof. Seokhyung Bae, I was involved in the research and development of a novel color recommendation system that helps designers choose harmonious color palettes in their workflow.

Researches

- Color recommendation system
  - Designed and implemented controlled studies of a novel color recommendation system.
  - Analyzed and visualized the data obtained from the system itself and the studies conducted.
  - Surveyed related technology in computational colorimetry, computational aesthetics, color theory, and recommender systems.
- Mutliple device interaction design methodology
  - Surveyed and analyzed various state-of-the-art publications related to multiple device interaction.
- Designed methods of data visualization for an in-house pipeline for data visualization and analysis

Batchelor of Computer Science, Honours

University of Waterloo, Cheriton School of Computer Science

> Location: Waterloo, Ontario
>
> Duration: 2011 - 2014

Candidate for Batchelor of Commerce, Honours

Mount Allison University

> Location: Sackville, NB
>
> Duration: 2010

- Transferred to University of Waterloo after two academic terms.

Publications

- Jeff Avery, Mark Choi, Daniel Vogel, Edward Lank. Pinch-to-Zoom-Plus: An enhanced pinch-to-zoom that reduces clutching and panning. UIST 2014

Misc

Awards

- National Scholarship, Korea Advanced Institute of Science and Technology 2015
  - Equivalent of USD 40,000 over 4 academic terms
- President's Scholarship, Mount Allison University 2010
  - Equivalent of CAD 20,000 over 8 academic terms

Language proficiency

- Korean: Native
- English: Bilingual