Kevin Chang

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Professional Experience

Google: Automated Material Ordering Configuration Platform (~2 years)

Worked on a low-code development platform where business planners configure an automatic conversion of abstract data center change plans (below) into concrete bills of materials. In 2021, over ten thousand Google data center parts were automatically ordered through this system.

Software Engineer

Supports new product introductions by working with business planners to design new keywords ("Parameters") to extract from upstream systems. Collaborates with downstream system teams to design APIs that return information about material order status and fulfillment details.

- Supporting department horizontal to unify data center change modeling, by designing and implementing a new Parameter extraction system to work with the new Entity-Relationship model (from a hierarchy model), with a gradual per-plan rollout. This allowed the deletion of a change modeling system, simplifying workflows.
- Optimized keyword extraction system by replicating external calculations locally, removing the need to query data center change plans repeatedly. This reduced keyword extraction from two hours to 20 seconds – almost a 200x improvement!

Google: Abstract Data Center Planning Tool (~2 years)

Worked on a no-code development platform that allows business planners to abstractly manage planned data center changes. This includes intra-data center (such as adding new racks into a data center) or inter-data center (such as adding new capacity between data centers).

Operating Tech Lead (12 weeks)

Despite being a junior-ranked software engineer, substituted for the tech lead during paternity leave. In addition to regular software engineer duties, also onboarded a crew of senior software engineers, and was on-call for the entire duration.

- Represented business planners' interests in abstractly modeling expansions to Google's private software-defined WAN. Designed a method to reduce 64 links down to one link.

Software Engineer (2 years)

Supported new product introductions by designing minimal models with business planners for ease of managing. Collaborated with downstream systems to ensure that minimal models contained sufficient information for material orders.

- Converted Network Control Service Racks from an attribute of "full" data centers into entities, by collaborating with business planners and automated material ordering SWEs to design a solution for all. This allowed us to begin tracking these racks, add them to "mini" data centers, and configure their connections.
- Designed and implemented a script to convert Google's private software-defined WAN from border router attributes into entities. The script determined where each WAN node was first referenced, inserted a new entity before this reference, and added relationships between nodes and border routers. This allowed border routers to connect to multiple WAN nodes at once.
- Optimized caching to replace a 30-second pre-load with less disruptive lazy-loads (< 2s).

Education

Bachelor of Science in Computer Science
Rice University – Houston, TX – 2018

Technical Skills

- Expert in **Java –** certified at Google to determine who can submit code without supervision.
- Proficient in **TypeScript** – able to submit code at Google without supervision.
- Has also submitted code in **Python**, **JavaScript**, **SQL**, and **Golang**.