

AKASH BHATTHAL

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Portfolio  <https://www.abhatthal.com>

LinkedIn  <https://www.linkedin.com/in/abhatthal>

GitHub  <https://www.github.com/abhatthal>

Who am I?

I am an Ex-Google software engineer with 2 years of experience developing YouTube's Search infrastructure using C++. I currently live in the San Francisco Bay Area and am open to relocation.

Experience

Software Engineer, Google

May 2, 2022 – April 22, 2024

- Built upon YouTube Search infrastructure to more efficiently serve queries with reduced cost and latency
- Contributed over 20,000 lines of C++ code including optimizations and migrations
- Reduced Search latency by 3 milliseconds without any search quality impact by cutting ThinSearch document retrieval size by 30%
- Embedded precompiled machine learning models for Search wholepage ranking for improved performance over dynamic models
- Moved Ads RPC call to leverage partial search response for more relevant ads

Software Engineering TA, Code Platoon

Feb 1, 2021 – May 31, 2021

- Taught data structures, algorithms, and fundamentals of computer science to a class of 30 military veterans.
- Assisted students with programming assignments and web development projects
- Built web applications using modern frameworks including Django and React

Projects

Parabix on ARM

<https://abhatthal.github.io/parabix-arm>

- Provided support for Parabix, a high-performance programming framework, to leverage SIMD and multicore parallel processing features on Apple Silicon
- Translated 9 x86 operations into equivalent ARM using LLVM IR
- Contributed over 200 of lines of C++ code over a 3-month semester

Kraken

<https://github.com/abhatthal/kraken>

- Built and maintained a Python Discord bot for user-management, moderation, and logging of over 300 users over 3 years

The Giving Tree

<https://www.github.com/abhatthal/the-giving-tree>

- Designed and developed a simple clicker game with C# in the Unity game engine
- Led a team of 4 developers over a 3-month semester using Agile methodology

Sony AVCHD Extraction

<https://github.com/abhatthal/video-tools>








- Wrote a collection of 6 Python and Bash scripts to extract and merge video clips from Sony AVCHD camcorders
- Leveraged FFmpeg to batch convert MTS files to MP4 videos while retaining metadata
- Examined EXIF metadata to merge burst videos by date and time

Website Portfolio

<https://github.com/abhatthal/portfolio>

- Published a responsive website summarizing my experiences and projects
- Utilized Content Delivery networks for Bootstrap Icons, JQuery, and Zenscroll
- Embedded dynamic content with the Google Maps Embed API
- Built from scratch using HTML, CSS, and JavaScript without the use of website templates or web frameworks like Angular or React

Skills

 Web Dev	React, Django, Flask, Spring Boot, ThymeLeaf
 Data Science	NumPy, Pandas, Spark
 Compilers	LLVM IR, Parabix, Neon
 Game Dev	Unity, Unreal Engine
 Databases	PostgreSQL, MySQL, Django ORM
 Containers	Docker, Docker Compose
 Graphics	OpenGL (GLUT in C++)

Programming Languages

C/C++, Python, JavaScript, Bash, Java, Haskell, C#, MATLAB, R, Go, Rust

Education

Simon Fraser University

Bachelor of Science, Computer Science

2017 – 2022