Technical Stack & Toolkit | Govind

Practical Usage & Daily Workflow Explanation

1. Development Environment & Coding Tools

I use Visual Studio Code every day to do my work. Visual Studio Code is the tool I use. I have added some features to Visual Studio Code to make it work better for me. These features help me check my code for mistakes make it look neat and find problems. Visual Studio Code also helps me work with Git. Gets help from artificial intelligence.

This setup helps me work fast and make sure my code is clean and easy to understand. I can also. Fix problems quickly no matter what programming language I am using. Visual Studio Code is really helpful, for me when I am working with languages.

The Cursor is a tool that people use to write code with the help of a computer program. This computer program works with the person to make the code better. The Cursor is really good at helping people make code work better understand code that they did not write, create basic code and figure out hard parts of the code. The person is still, in charge. Makes sure everything is okay. The Cursor is used with the code that the person is working on.

I use Git and GitHub to keep track of changes and work with others on projects.

Git and GitHub have a lot of tools that help us work together in a way like feature branches and pull requests and issue tracking.

I like that Git and GitHub have GitHub Actions which automates a lot of tasks like running tests and building applications and deploying services. I do not have to do these things myself.

This way Git and GitHub make it easy for me to manage my projects and collaborate with others.

Docker is really helpful when we want to make sure our applications work the way in different places. We use Docker to put our applications into containers. This means our applications will work the way when we are developing them when we are testing them and when they are live, in production.

Kubernetes is used when we need to make our services bigger. We use Kubernetes to manage a lot of containers at the time. This is called container orchestration. Kubernetes also helps us to handle load balancing when we have a lot of users using our services at the time. This is really useful when we have deployments and we need to make sure everything works smoothly. We use Kubernetes to make sure Docker containers work together.

I use Postman and Insomnia every day for API validation and debugging.

Postman and Insomnia help me test the REST and GraphQL endpoints.

I also use Postman and Insomnia to verify the request and response structures.

Additionally Postman and Insomnia are used to authenticate the APIs and simulate what real clients do with the APIs.

This way I can see how the APIs work with Postman and Insomnia.

2. Web Frameworks & Execution Runtimes

When we are working on the frontend we use React.js to build the user interfaces. We make lots of parts that can be used again and again. Our daily work is pretty straightforward. We create these parts, which are called components and we make sure they work well together. We also have to manage the state of these components, which means we have to keep track of what's happening with them. Then we have to integrate the APIs, which's like connecting our components to other systems. And we have to make sure everything runs quickly and smoothly so the user has an experience, with React.js. We want to make sure React.js is working well and that the user interfaces we build with React.js are responsive.

When we work on the backend we use Node.js with Express to build APIs that people can use to get information and services in time. This also helps us handle things like who can use our services how they get to them and what happens when they try to use them. But for services that need a lot of brain power from computers or have to deal with a ton of data we like to use FastAPI because it's really fast can do many things at the same time and makes it easy for us to document what our APIs do.

People use things like Bun and Deno to run JavaScript and TypeScript applications.

These new things make the applications start up faster. They are more secure.

They also have tools that work well with them.

This is really helpful when you are trying out things with JavaScript and TypeScript applications and you need them to work very fast.

Bun and Deno are especially good, for this because they have everything you need to run JavaScript and TypeScript applications safely.

3. AI / Machine Learning Frameworks

PyTorch is really useful, for deep learning tasks. People use PyTorch to create and train networks. They also use PyTorch to make these neural networks work better.

PyTorch is used for trying out things and creating models. It is also used when people want to train their models in a way.

Scikit-learn is something that people use for machine learning tasks like trying to figure out numbers with regression putting things into groups with classification grouping things together with clustering getting data ready with preprocessing and seeing how good a model is with evaluation. Scikit-learn is really important for making features that're useful and creating basic models that we can use as a starting point, for Scikit-learn tasks.

The Hugging Face Transformers is the place where models are stored. It has lots of things like pretrained models and tokenizers that people can use to make their applications. These applications can do things like understand language and make text. They can also summarize things. Even make new images. The Hugging Face Transformers is really useful, for people who work with language and images.

When we are working with pictures and videos on computers we use OpenCV to get the images ready find things in the pictures look at each frame of a video and change what we see in time with OpenCV. OpenCV is really

helpful for these kinds of tasks. We can do a lot of things with OpenCV like get images for use and find objects, with OpenCV.

4. Agentic AI & Automation Tools

When we build AI systems we use CrewAI and Microsoft AutoGen to manage all the different parts that work together. Each part, which we call an agent has a job to do, like planning, researching or carrying out tasks. This means CrewAI and Microsoft AutoGen can break down tasks into smaller parts and help all the agents work together to figure things out. CrewAI and Microsoft AutoGen are really good, at helping the agents work as a team.

Zapier AI Actions and n8n are tools that help people automate tasks between applications. This means they can do things like trigger AI models when something happens or keep data the same across platforms. They also make it easy to build automation pipelines that use AI without needing to write a lot of code which can then be used to make business processes more efficient. Zapier AI Actions and n8n are really useful, for automating workflows across applications.

5. Large Language Model (LLM) Platforms

People use computer programs like Google Gemini and OpenAI to make chatbots and other tools that can think and talk like humans. Google Gemini has versions, like 1.5 Pro and Flash. OpenAI has a version called GPT-4o. There is also Anthropic. The choice of which program to use depends on how it needs to work how well it can think and how much it costs. These programs are used for lots of things, including chatbots making content helping people make decisions and making AI agents that can do tasks on their own.

When you want to use models like Llama 3 and Mistral without being online Ollama is what you use to run these models on your computer. This way you can work on things without being connected to the internet which's good, for keeping your work private and it does not cost you a lot of money to try out new things. Llama 3 and Mistral are run locally with Ollama. If you need to get results really fast Groq is used for Llama 3 and Mistral to make this happen.

When we want to make a model we use Axolotl to teach and adjust open-source language models to work with specific information and particular tasks. This helps the language models learn what we need them to do. We do this with Axolotl and the open-source language models like the ones that're available to everyone and we make them work with the specific information and tasks that are important, to us.

6. AI Tools Used Frequently

GitHub Copilot and Supermaven function as coding assistants during daily development, accelerating code writing, reducing boilerplate, and assisting with unfamiliar APIs.

I use Perplexity AI for research. To find information. Perplexity AI helps me to quickly check if my ideas are good learn about things and find sources to back up what I am saying. I can use Perplexity AI to explore Perplexity AI and see what it can do for me. Perplexity AI is really useful, for my research because it saves me time and helps me find what I need.

People use ChatGPT and Gemini Advanced for a few things. They use ChatGPT and Gemini Advanced to come up with ideas. They also use ChatGPT and Gemini Advanced to explain things. Sometimes ChatGPT and Gemini Advanced are used to find mistakes and fix them. Additionally ChatGPT and Gemini Advanced are used for

something called engineering. This means they use ChatGPT and Gemini Advanced to work on the questions they ask.

When I am working on projects I use Midjourney and Flux to make pictures with the help of artificial intelligence. These pictures are really useful for thinking about user interface ideas making marketing materials and creating content. I like to use Midjourney and Flux because they help me come up with ideas, for Midjourney and Flux projects.

7. Cloud Platforms & Deployment

We use Google Cloud Platform and Amazon Web Services to build our cloud infrastructure. These are the platforms we work with. Google Cloud Platform and Amazon Web Services have a lot of services that help us. For example we use EC2, Lambda and S3 from Amazon Web Services for computing, storing data and running things without servers. We like Google Cloud Platform and Amazon Web Services because they make it easy to do these things.

Vercel is what I use to put my frontend stuff. It gets my website to people fast no matter where they are, in the world. I also like that Vercel gives me a preview of what my site will look like before it's live. And the best part is that Vercel works well with my other tools so I can just set it up and forget about it. Vercel makes it easy to get my frontend project online and working smoothly.

Supabase is a database. It also helps with the backend of a service. It does a lot of things like authentication and real-time data. It even does serverless functions. This makes it really good for developing applications. Supabase is very useful, for people who want to make apps fast.

8. Databases & Data Storage

When we are dealing with data we use PostgreSQL to manage our structured datasets and transactions and it also helps us with complex queries. PostgreSQL is really good, at handling this kind of data. We can use PostgreSQL to manage all sorts of data.

MongoDB is really good for storing data in a way without needing to stick to a specific format. This means you can store all sorts of data in MongoDB. On the hand Redis is used to store some data, in the computers memory, which makes things faster. This is called a cache. Using Redis like this helps make things run smoothly and takes some pressure off the database. MongoDB is used for storing data. Redis is used for caching.

For Retrieval-Augmented Generation (RAG) systems, Pinecone is used as a vector database. It stores embeddings generated from documents, enabling semantic search and context-aware LLM responses by retrieving the most relevant information before generation.