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Cover Letter

Hey there! I'm **Utsav** a **developer** with **~4 years of experience** who genuinely loves building things that work. Currently at **Midh Technologies**, I fine-tune **LLMs like Llama 3.2** on **Azure Kubernetes**, build **React/Next.js frontends**, and deploy scalable **APIs** that handle **50k+ requests daily**. But honestly, the technical stuff is just the beginning.

What really drives me is **automation**. I've built an **AI-powered video generation pipeline** that creates and uploads **50+ videos daily** to my **YouTube channel** (@thatinsaneguy28). I have a **personal AI assistant** running on a **Raspberry Pi** that controls my entire home setup from movie streaming to job applications. I even built a cross-platform movie controller so I can control movie streaming services and ads from my phone (don't tell them!).

When I'm not coding, you'll find me **gaming** or playing **outdoor sports**. Gaming isn't just a hobby it's shaped my **problem-solving approach** and **attention to detail**. I've worked with gaming studios integrating **cryptocurrency payment systems** and built **sign language translation systems** for **AR environments**. Sports teach me **teamwork** and **persistence**, qualities I bring to every project.

I thrive on making life easier through code. Whether it's automating **LinkedIn data extraction** (processing **1000+ records per batch**), scraping event platforms, or building handwritten assignment generators that got **5000+ downloads**, I'm always looking for the next challenge. My personal projects aren't just code they're **solutions to real problems**.

I work with **Python**, **React**, **Cloud.....** Tools are just tools what matters is **building something** that makes a **difference**.

I'm looking for a team where I can bring my **automation mindset**, **technical skills**, and **passion for solving real problems**. Let's hang out in an interview and discuss how we can help each other build something amazing. I promise it'll be worth your time!

Projects

BrownMailer – AI-Powered Job Discovery & Recruiter Outreach Personal Project **YouTube:** `youtube/demo`

- Built comprehensive **end-to-end job search automation platform** combining **Chrome Extension + FastAPI backend + React frontend**, automating job discovery to recruiter outreach with **AI-powered personalization**.
- Developed **multi-platform scraping engine** using **Selenium** and **Beautiful Soup** to extract jobs from **LinkedIn/Dice**, processing **500+ job listings daily** with intelligent keyword filtering and company blacklists.
- Architected **dual-mode Chrome extension** with auto-detection of LinkedIn pages, integrating **Google Search API + SalesQL API** to identify and extract recruiter contact information with verified emails.
- Integrated **LLM-powered skill extraction** using **Ollama + ChatGPT API**, analyzing job descriptions to extract technical skills and craft personalized outreach emails that increase response rates.
- Built **recruiter intelligence system** mapping company hierarchies, tracking interaction history, and enabling strategic follow-up sequences to prevent duplicate outreach across applications.
- Implemented **automated email orchestration** using **Gmail API**, sending personalized messages from user's inbox with smart scheduling and follow-up management based on response patterns.
- Created **job management dashboard** with **React/TypeScript frontend**, featuring real-time application tracking, recruiter mapping, and analytics on success rates and market trends.
- Deployed scalable architecture using **Docker containers + SQLite/MySQL + Redis caching**, handling concurrent processing while maintaining **99.8% uptime** and processing **10,000+ applications monthly**.

AI-Powered Video Generation Pipeline Personal Project **Instagram:** `instagram/thatvocabguy/`

- Developed an **AI-powered video generation pipeline** using **Python** and **machine learning models**, integrating **F5-TTS (Flow Matching)** for high-quality voice cloning and speech synthesis, creating complete AI-generated content.
- Integrated **OpenAI API** for intelligent script generation and **F5-TTS** for creating cloned audio with fluent speech reproduction, using WhisperAI for transcription and FFMPEG for adding subtitles to the video.
- Built sophisticated video processing system using **FFMPEG** to merge audio with dynamic trending gaming backgrounds, extracting random segments from large video files and overlaying custom images and text for randomized generation.
- Designed end-to-end automated pipeline that processes scripts, generates voice audio, combines with dynamic backgrounds, and creates complete videos with customized text overlays and synchronized audio-visual elements.
- Developed multi-channel automation system supporting **YouTube** and **Instagram** uploads, maintaining platform-specific metadata, tags, and formatting while ensuring consistent branding and content optimization across channels.
- Created intuitive **Gradio interface** for pipeline management, allowing real-time monitoring of video generation progress, voice cloning status, and batch processing of multiple videos with customizable parameters.

- Orchestrated scalable deployment using **Docker containers** and **CRON jobs**, enabling automated content creation and distribution pipeline that generates and publishes **50+ videos daily** across multiple social media platforms.

LinkedIn Reverse Search Client Project

- Developed a LinkedIn scraping bot using **Python**, **BS4**, **Selenium**, and **Requests** to automate **data extraction** and validation from diverse web sources.
- Fine-tuned a **Hugging Face model** to detect features frm messy **HTML structures**, enabling accurate scraping, & validation.
- Designed and implemented a pipeline to process input Excel sheets with headers (`firstName`, `lastName`, `companyName`) and output enriched data with additional details, including `LinkedIn URLs` and verified `Contact Emails`.
- Built a **threaded data enrichment pipeline** to process data in parallel across LinkedIn, SalesQL APIs, and the fine-tuned **LLM**, improving efficiency by **30%**.
- Developed a client web app using **Next.js**, integrating user auth with **Firebase Auth** & data storage via **Firestore DB**.
- Maintained a database of prev data to eliminate redundancies, reducing processing time for recurring requests by **40%**.
- Set up a secure **SMTP server** for automated email delivery of Excel sheets to recipients, ensuring reliable data sharing.

Eventbrite & LUMA Scraping Client Project

- Developed a Python bot to scrape events from **Eventbrite** and **LUMA platforms** hourly, extracting key details such as `Event Name`, `Description`, `Start Date`, `End Date`, and `Registration URL`.
- Designed an optimized **SQL schema** to store and manage structured event data, ensuring seamless retrieval and scalability.
- Built a dynamic **keyword filtering system** to identify events related to **Cryptocurrency**, **RWA**, and **Tokenization**, with additional filters for **Date Time** and **Location**.
- Automated **data cleaning and preprocessing** pipelines in Python to ensure relevant and accurate event information.
- Created a **web application** to display event data, incorporating **CRM functionalities** for tracking and managing events.
- Implemented a robust ingestion pipeline to handle continuous updates from event sources, improving processing speed **35%**.
- Delivered tailored solutions for **keyword-based event categorization**, aligning with client-specific business goals and improving event relevance.

Apeksha – AI-Powered Personal + Home Assistant Personal Project **GitHub:** `github/UttU28/Apeksha`

- Designed and deployed a fully offline-capable, multimodal AI assistant for personal and home automation use, powered by custom LLM pipelines and real-time speech interfaces.
- Fine-tuned and hosted a local **LLaMA 3.2 Vision** model with **GPU acceleration** and integrated **Ollama** as the primary conversational agent, enabling private on-device inferencing for image+text queries with intelligent task routing.
- Deployed the assistant interface and I/O services on a **Raspberry Pi 4B** running **Home Assistant**, integrating local **Whisper (STT)** and **Piper (TTS)** via **Wyoming Satellite containers** for real-time voice interaction.
- Built custom **wake-word detection** using **OpenWakeWord** + **TensorFlow**, with **Whisper** as backup for voice command verification, supporting on-device hotword listening without constant cloud polling.
- Developed an intelligent **agent routing framework** using MCP-style pipeline to parse user intents, classify task categories, and orchestrate automation flows through micro-agents, TSMs, and decision graphs for dynamic query handling.
- Created a dynamic **Web Dashboard UI** to visualize assistant state, voice commands, and automate linked projects:
  - **Movie Controller**: Cross-device remote control using OpenCV, PyAutoGUI. `link`
  - **Job Application Helper**: Automates job discovery, AI-enhanced resume matching. `link`
  - **Bhashini**: Integrates with Indian language APIs for multilingual voice translation. `link`
  - **Ashwathama**: OBD2 sensor data analysis and car control visualization. `link`
- Continuously expanding features to include vision-based control (via Pi Camera), context-aware reminders, dynamic home automation triggers, and multi-user personalization.

Movie Controller Application Personal Project **GitHub:** `github/UttU28/Movie_Controller_2`

- Developed a cross-platform media controller as a Python-based client-server application, enabling remote control of a PC for streaming platforms like **YouTube**, **Netflix**, and **Prime Video**.
- Designed a Smart TV-style remote interface using **Vite** and **React**, ensuring an intuitive and responsive user experience.
- Configured **POST requests** from **React client** to **Flask** backend, enabling seamless communication for command execution.
- Integrated **PyAutoGUI** to emulate PC controls like typing, searching, & navigating through browser and media like Netflix, Prime, YouTube, and other UNdisclosed sites :) for media and content control on device.
- Utilized **OpenCV (CV2)** for image recognition to detect screen objects and perform targeted actions, including ad skipping and automated playback adjustments.

- Enabled browser-based remote access to the React client, allowing to control PC from any device within network securely.
- Provided a streamlined media control experience, enabling users to interact with streaming platforms through their **personal devices**, improving convenience and accessibility.

AssignmentX Personal Project **GitHub/YouTube:** `github/UttU28/AssignmentX`

- Designed & developed an Android & web application that generates handwritten-like assignments, utilizing **Python**, **NumPy**, **Pillow**, **Django**, & **Android Studio**. Achieved over **5000+ downloads** & maintained **200+ daily active users (DAUs)**.
- Leveraged **Pillow** and **OpenCV2** for **OCR-based image processing**, incorporating a custom **human behavioral algorithm** to replicate natural handwriting variations with realistic stroke simulation.
- Developed and deployed a scalable **Python RESTful API** backend on **Azure**, integrating **Azure App Services**, **Azure SQL Database**, and **Blob Storage** for seamless performance and data management.
- Integrated **Django** to facilitate seamless interaction between mobile, web, and backend services, ensuring a unified user experience across platforms.
- Enabled real-time email functionality using **SMTP**, allowing users to generate and send dynamically created PDFs of assignments directly through the app.
- Optimized performance using **multi-threading** & caching techniques, reducing response times & improving user satisfaction.
- Ensured a robust and scalable architecture, maintaining balance between high performance and ease of use for all platforms.