

# Priyanshu Vij

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## EDUCATION

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**Manipal Institute of Technology**

*B.Tech. in Computers & Communication Engineering | CGPA: 8.00*

Manipal, India

2021 - 2025

## EXPERIENCE

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**Research Engineer**

Jul 2025 – Present

**BlackRock**

- Designed and implemented an **LLM-powered multi-agent system** for **equity portfolio construction**, with planner agents integrating retrieval-augmented market context and quantitative analytics.
- Engineered and optimized data & ML pipelines together with evaluation framework, reduced end-to-end latency, enhanced reliability, and implemented strict guardrails for exposure, sector, position, and liquidity constraints.
- Co-authored on a U.S. patent** for application on agentic risk-aware portfolio construction and intelligent order sizing.

**Research Intern**

Jan 2025 – Jul 2025

**BlackRock**

- Designed and implemented a **one-stop agentic workflow** in Aladdin for index subscription thus reducing average index subscription time by **80%**

**ML Research Program**

May 2023 – July 2023

**Intel**

*Remote*

- Developed a CNN model for image classification using MNIST dataset. Deployed quantized INT8 model with 2.1x faster inference than FP32 while maintaining 1% accuracy drop.
- Leveraged Intel's TensorFlow optimizations to boost accuracy and outperform benchmark metrics.

## PROJECTS

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**Celea** | *Next.js 14, TypeScript, Tailwind, Supabase (Postgres+Storage), Prisma, Inngest*

- Built an AI-native, self-iterative video refinement system that generates Hollywood-caliber cinematic videos from user prompts and scores outputs against project goals.
- Implemented an **auto-iterative loop** with background jobs (Inngest) and SSE real-time progress for long-running video generation.
- Delivered end-to-end full-stack application: Next.js App Router for intuitive project management UI, Prisma ORM for robust data modeling, and Supabase for secure Postgres persistence and video asset storage, ensuring scalable AI-native workflows.

**Multimodal Image Generation System** | *Python, PyTorch, HuggingFace Diffusers*

- Developed **custom diffusion pipeline** supporting text+sketch conditioned generation.
- Added LoRA adapter support for efficient model customization
- Enabled training on consumer hardware by implementing Gradient Checkpointing, FlashAttention-2, and 8-bit Adam optimization, reducing peak VRAM requirements by **35%**

**CampusBuzz** | *React Native, React JS, Node.js, Express, MongoDB, Tailwind CSS*

- Built and launched a cross-platform student information/events app and admin web portal using React Native, Node.js, Express, and MongoDB - used by over **10,000 student users**.
- Designed and implemented access-based dashboard interfaces for event moderation, issue resolution, and analytics.

**Groot** | *3D AR Green Mobility Game*

- Designed AR gameplay where rare "Groot" spawns appear only on green routes & shared-transport nodes, nudging players toward sustainable choices through fun & scarcity.
- Selected **Top 6 / 360** at a national hackathon for functional AR gamification.

## TECHNICAL SKILLS

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**Languages:** Python, C++, CUDA, C, JavaScript

**Frameworks:** React, React Native, Node.js, Flutter

**ML/AI Frameworks:** PyTorch, JAX, TensorFlow, Keras

**Tools & Cloud:** Git, Linux, Docker, AWS, SQL, MongoDB

## PUBLICATIONS

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**Riemannian Geometry: Speech Detection from MEG Brain Signals towards Non-Invasive BCI**

*IEEE EMBS NER 2025*

*Poster (FR3.R2.68), IEEE EMBS Neural Engineering (NER) 2025*

*San Diego, USA*

**Authors:** Priyanshu Vij, Aryan Mangla, Raj Mehta, Jonas De Schouwer

*Nov 2025*

## SELECTED ACHIEVEMENTS

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**Blackrock** | *Filed a U.S. Patent related to agentic risk-aware portfolio construction and intelligent order sizing.*

**Y Combinator** | *Selected for AI Startup School*

**Y Combinator Hackathon** | *Top 5 from 400 teams at YC HQ, San Francisco*

**M# National Hackathon** | *Top 6 among 360 registered ideas*

- "GROOT" - an app designed to encourage sustainable transport with functional AR gamification.