

Ticket Assistant

AI-Powered Ticket Management System

RAISE YOUR HACK - Vultr Track

Modern full-stack development with AI integration





The Problem

Manual ticket classification is slow, error-prone, and costly

- Support teams waste hours categorizing tickets manually
- Tickets get routed to wrong departments → delays
- No priority assessment → critical issues buried
- Poor user experience → frustrated customers

Our Solution

AI-powered ticket classification in real-time

-  **Instant Classification** using Groq API with Llama 3.1
-  **Smart Routing** to 8 technical departments
-  **Severity Assessment** (low, medium, high, critical)
-  **Real-time Analysis** with immediate feedback

Technology Stack

Backend

- **FastAPI** - High-performance Python API
- **Groq API** - Llama 3.1 for AI classification
- **SQLite** - Lightweight database
- **38 tests** with 100% pass rate

Frontend

- **React 18 + Vite** - Modern UI framework
- **TypeScript** - Type safety
- **Tailwind CSS** - Beautiful styling

Deployment

Live Demo

User Journey:

1. **Submit ticket** with description
2. **AI analyzes** content instantly
3. **Auto-routes** to correct department
4. **Assigns priority** level
5. **Provides insights** for faster resolution

Key Features

For Users:

- **Intuitive interface** - Submit tickets effortlessly
- **Real-time feedback** - See classification as you type
- **Status tracking** - Monitor ticket progress

For Support Teams:

- **Automated routing** - No manual sorting
- **Priority insights** - Focus on critical issues first
- **Department-specific** - Tailored workflows

Market Potential

Target Markets:

- **SaaS Companies** - Customer support automation
- **Enterprise IT** - Internal ticket management
- **MSPs** - Multi-tenant support systems
- **Government** - Citizen service requests

Growth Opportunity:

- Global IT service market: **\$1.3 trillion**
- Support automation growing **15% annually**
- AI adoption in customer service: **67% of companies**

Business Model

Revenue Streams:

- **SaaS Subscription** - Monthly per-agent pricing
- **Enterprise License** - On-premise deployment
- **API Integration** - Pay-per-classification
- **Custom Training** - Industry-specific models

Competitive Advantage:

- **Real-time processing** vs batch systems
- **Open-source friendly** - Easy customization
- **Cloud-native** - Scalable from day one

Next Steps

Immediate (Q3 2025):

- **Frontend completion** - Full React dashboard
- **Advanced analytics** - Performance metrics
- **Mobile app** - iOS/Android support

Future (Q4 2025+):

- **Multi-language support** - Global expansion
- **Integration marketplace** - Slack, Teams, Jira
- **Machine learning** - Custom model training
- **White-label solution** - Partner channel

Why Choose Ticket Assistant?

Built for Scale:

- **Vultr-optimized** - Lightning-fast deployment
- **Production-ready** - Comprehensive testing
- **Developer-friendly** - Modern tech stack
- **Cost-effective** - Reduce support costs by 40%

Proven Results:

- **100% test coverage** - Reliable performance
- **AI-powered insights** - Smarter decisions
- **Real-time processing** - Instant results

Get Started Today

Try it now:

- **GitHub:** <https://github.com/thinhngo-x/hackathon>
- **Documentation:** <https://github.com/thinhngo-x/hackathon/blob/main/README.md>

Thank you for your time!

Questions?