

# ABHINAY KOTLA

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[GitHub](#)   [Portfolio](#)

## SUMMARY

Software Engineer with over 3 years of experience building and deploying AI systems. Skilled in **Machine Learning, Data Structures, and Algorithms**. Developed AI-powered chatbots, optimized computer vision pipelines, and fine-tuned NLP models for production use. Experienced in full-stack software development, integrating ML with scalable systems, and delivering real-world business impact through data-driven automation.

## WORK EXPERIENCE

- IT Operations**  
*UT Arlington Office of Information Technology, Arlington, TX*

Sep 2024 – Present

  - Designed and developed an AI-powered chatbot using Python and NLP for campus IT, automating support queries through model-based intent detection.
  - Improved ticket resolution time by 18% and deployed retraining pipelines with ServiceNow integration.
  - Supported IT operations by developing automation scripts and optimizing infrastructure workflows.
- OIT Tech Support**  
*UT Arlington Office of Information Technology, Arlington, TX*

Aug 2024 – Sep 2024

  - Supported ~5,000+ users, resolving hardware, software, and network issues in Linux, macOS, and Windows systems.
  - Documented IT workflows and created knowledge-base SOPs, reducing ticket escalations by 20%.
  - Assisted in device imaging, switch configurations, and network maintenance across campus labs.
- Full Stack Developer – Saintechinc**  
*Python, React, Node.js, REST APIs, Authentication, Deployment*

Feb 2023 – Nov 2023

  - Built and deployed a responsive full-stack application with secure user roles and real-time analytics.
  - Achieved 99.9% uptime and improved SEO metrics by 40% through structured data and optimized routing.
  - Applied component-based architecture for modular scalability and maintainability.
- Machine Learning Engineer – 1StopAI**  
*Python, scikit-learn, Audio Processing, ML Deployment*

Nov 2021 – Jan 2022

  - Developed real-time mood and gender classification models for customer support calls.
  - Improved routing accuracy by 15% through emotion detection and ML inference optimization.
  - Deployed trained models in production using lightweight inference APIs.
- ML Content Developer – SmartKnowers**

Jun 2022 – Jul 2022

  - Designed ML learning modules on model evaluation, data pipelines, and cloud deployment.
  - Delivered interactive Jupyter notebooks and exercises that increased course engagement by 30%.

## SKILLS

|                             |   |
|-----------------------------|---|
| <b>Programming</b>          | Python (Advanced), C++, Java, Scala, R, SQL, Bash                                     |
| <b>Core CS Areas</b>        | Machine Learning, Data Structures, Algorithms, Systems Design                         |
| <b>ML &amp; AI</b>          | Deep Learning, Generative AI, LLMs, Transfer Learning, NLP, GANs, Feature Engineering |
| <b>Computer Vision</b>      | CNNs, Vision Transformers (ViTs), Image Inpainting, Object Detection                  |
| <b>Frameworks</b>           | PyTorch, TensorFlow, Keras, scikit-learn, OpenCV, Pandas, Spark                       |
| <b>Cloud &amp; Big Data</b> | AWS, Google Cloud, Azure, Spark, Hadoop, Kubernetes                                   |
| <b>DevOps &amp; MLOps</b>   | Docker, GitHub Actions, CI/CD, Model Serving, Terraform, Monitoring                   |
| <b>Data Engineering</b>     | ETL Pipelines, Data Wrangling, Kafka Streams, SQL Optimization                        |
| <b>Web Development</b>      | React, Next.js, Node.js, Firebase, REST APIs, CSS3, HTML5                             |

## PROJECTS

- Edge- and Color-Aware Adversarial Image Inpainting**  
*Python, GANs, Computer Vision, Deep Learning, Image Processing, PyTorch, Feature Matching, Loss Engineering*

  - Designed a dual-stage GAN (G1 edge generator, G2 color generator) for realistic completion on the CelebA dataset.
  - Reduced perceptual loss by 7% via color-hint regularization, feature-matching loss, and adversarial training.
  - Trained G1 on masked Canny edges and G2 for structure-texture fusion, improving fine-grained details.
- TuneParams.ai Community Platform**  
*React, Firebase, Firestore, Node.js, CSS, Authentication, Cloud Deployment, Web Security*

  - Built and deployed a scalable community platform for AI/ML discussions with public-read access and moderation.

- Implemented role-based authentication, Firestore security rules, and modular component architecture.
- Integrated user/payments dashboards and managed serverless functions for analytics and forum data.

**Efficient CV Models with Knowledge Distillation**

*Python, PyTorch, CNNs, Quantization, Model Compression, Optimization*

- Compressed a 669MB CNN into a 6.5MB model (~99% smaller) while maintaining 97% accuracy.
- Applied pruning, FP16/FP8 quantization, and dynamic residual learning for low-latency inference.
- Achieved real-time inference with ~10× less GPU memory and faster throughput.

**News Summarization using T5 Transformer**

*Python, T5, Transformers, NLP, Hugging Face, API Integration*

- Fine-tuned T5 on a news dataset for abstractive summarization with semantic coherence.
- Achieved ROUGE-1: 0.532 and cosine similarity of 0.80 against human references.
- Exposed the summarizer as an API with adjustable temperature and output length.

**Road Surface Classification Tool**

*Python, scikit-learn, Qt Designer, Data Visualization, Predictive Analytics, GUI Design*

- Built a GUI-based application to classify road surface defects and predict lifespan using ML.
- Trained and evaluated on 3.5k samples; achieved 85% accuracy across defect classes.
- Added visualization and reporting tools for field engineers using PyQt and matplotlib.

[More Projects on GitHub: [github.com/Abhinaykotla](https://github.com/Abhinaykotla)]

**EDUCATION**

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**Masters in Computer Science**

The University of Texas at Arlington  
GPA: 4.0/4.0

**BE in Computer Science**

Gandhi Institute of Technology and Management, Hyderabad  
CGPA: 8.47

**Certifications**

- Neural Networks and Deep Learning (DeepLearning.AI)
- Robotic Process Automation (RPA)
- IBM Big Data with Spark and Hadoop
- Wordcloud Using NLP and TF-IDF
- Google Technical Support Fundamentals

**LEADERSHIP & COMMUNITY**

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**Mentor – SCAI Club, University of Texas at Arlington**

- Led workshops on Machine Learning and Data Science fundamentals.
- Supervised a student project on cryptocurrency trend prediction using real-time inference.

Jun 2024 – Present

**Head – Coding and Gaming Division, GITAM COGAAN**

- Organized 10+ technical events, doubling participation through competitive coding and ML workshops.
- Conducted hands-on training on Algorithms, Data Structures, and gaming AI.

Jul 2020 – Jan 2023