Keerthana Purushotham

+1 858-203-8957 [PST] | **Linkedin** | **AUDIO SUMMARY 7m10s**
Papers & Citations | **IEEE Member** | **UCSD Alumni**

Subject: Cover Letter

To,
The Recruiting Manager,

Hello,

I am excited to apply at your esteemed organization, where my expertise in AI-driven security, cloud infrastructure, and large-scale automation aligns with your team's mission. At AWS, I have managed 1,300+ Linux CVEs, led AI-powered security automation, and built privacy-enhanced cloud security solutions, directly contributing to infrastructure security and risk mitigation at scale. I thrive in environments that challenge me to think deeply, adapt quickly, and bridge disciplines to create innovative solutions.

➔ Why I Am a Strong Fit for This Role—

→ 1. Cloud & Infrastructure Security: Experience deploying AI models on AWS Lambda, API Gateway, S3, and building real-time security monitoring with CloudWatch.

→ 2. Security & Vulnerability Management: Specialized in Linux security, threat detection, and FIPS-compliant vulnerability patching for Amazon Linux.

→ 3. AI & ML-Driven Security: Designed AI-based CVE impact analysis algorithms, developed ML-powered automation, and published peer-reviewed research in AI, ML, and NLP (39 citations, IEEE & ACL).

→ 4. Strong Theoretical & Practical Foundation: Expertise in graph algorithms, deep learning, and statistical modeling, with hands-on work in Python (TensorFlow, PyTorch), Rust (for AI applications), and SQL.

➔ Why This Role Aligns With My Goals—

→ I tackle engineering challenges with the same curiosity that drives my pursuits. Debate, coding, and quizzing sharpen my pattern recognition, while art, sports, and music refine adaptability and structure-key to scalable AI and security automation. This interdisciplinary mindset fuels innovative problem-solving in complex systems.

→ I am deeply passionate about scalable, ethical, and high-impact AI-driven solutions and believe my applied research, software engineering, and security expertise make me an ideal fit for this role. Products thrive on curiosity, interdisciplinary thinking, and a willingness to challenge the status quo-values that I have embraced throughout my career and personal pursuits.

I would love the opportunity to discuss how my skills can contribute to your Company's technical initiatives. Please let me know a convenient time to connect.

Best regards,
Keerthana Purushotham
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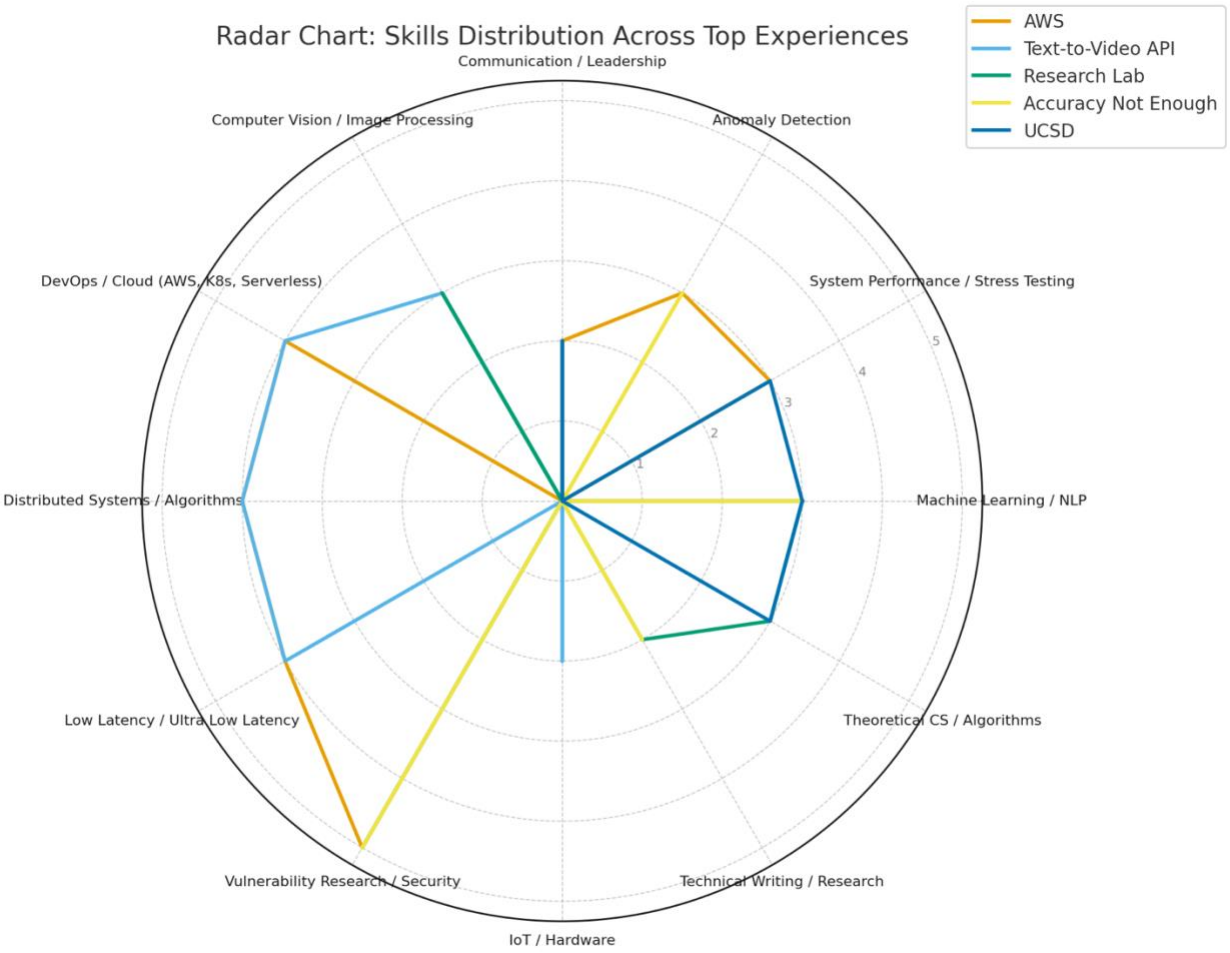
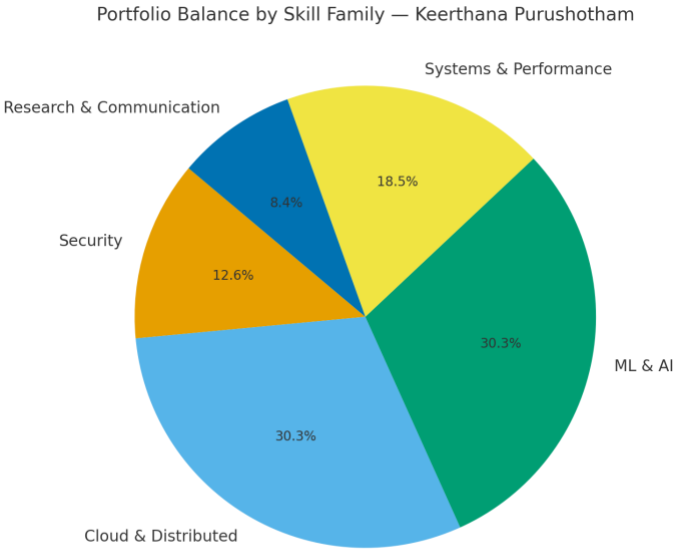
- **Radar Chart: Skills Distribution Across Top Experiences**



- **Portfolio Balance by Skill Group**



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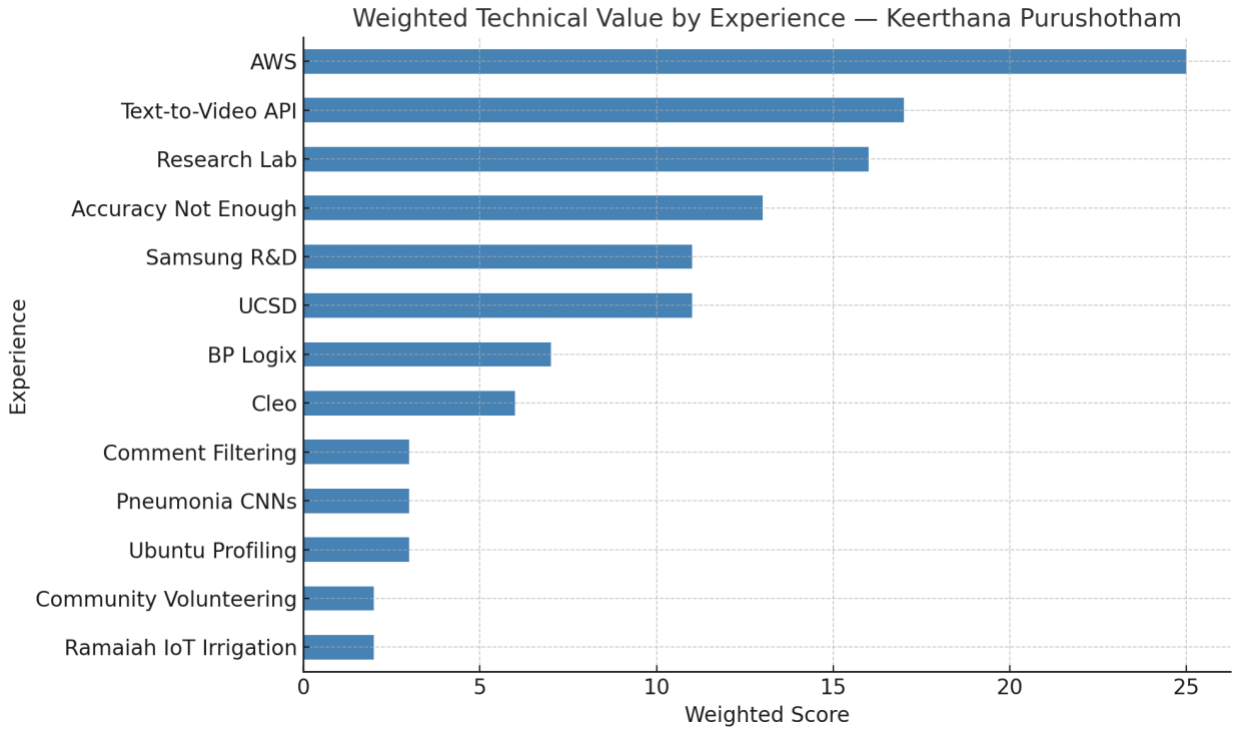
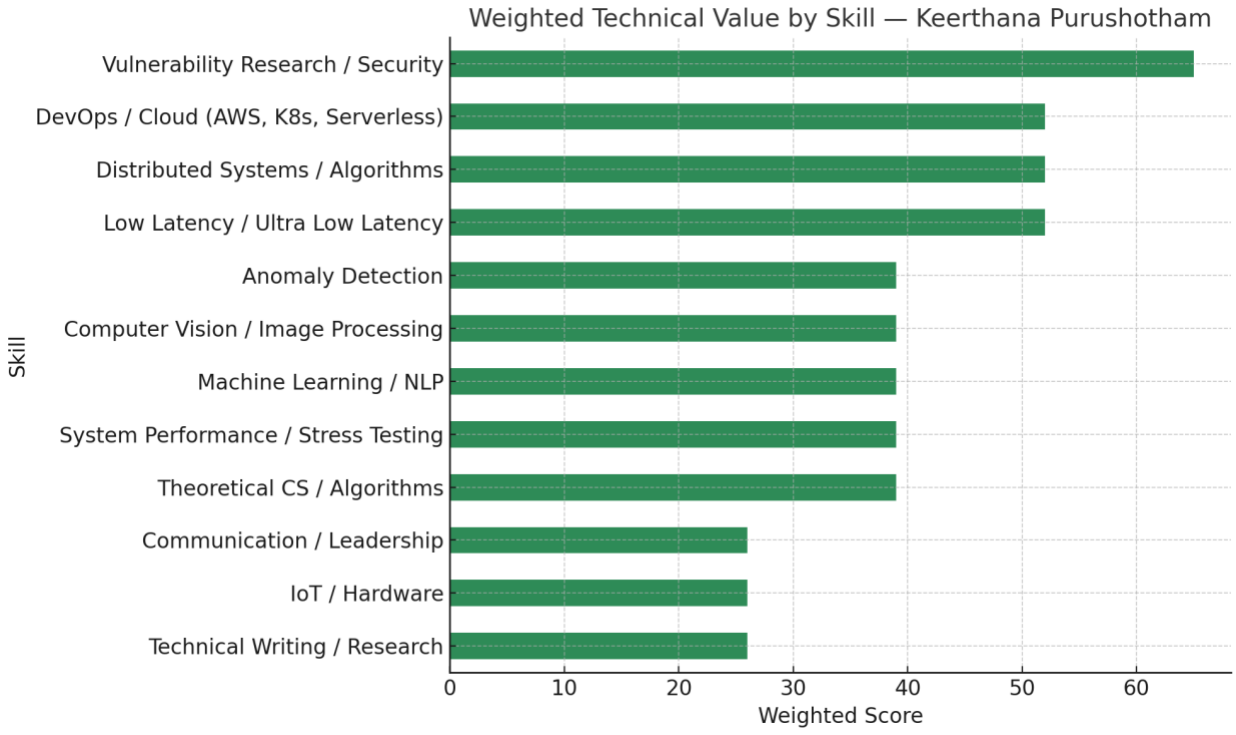
Keerthana's Skills
(as of 2025)
Research
research initiatives
publication process
data-driven research
prototyping
peer review
Math, Statistics & Computational Theory
linear algebra
calculus
optimization
graph theory
probability
time series
anomaly detection
algorithm analysis
experimental design
publications
Data Science
ETL
visualization
data cleansing
feature engineering
exploratory data analysis
time series forecasting
real-time data processing
Soft Skills
leadership
mentoring
communication skills
agile methodologies
documentation
public speaking
AI , ML , NLP & predictive models
supervised learning
algorithms
applications
unsupervised learning
clustering
dimensionality reduction
reinforcement learning
strategies
algorithms
deep learning
CNN
applications
architecture
RNN
applications
architecture
LSTM
GRU
transformers
BERT
GPT
generative AI
autoencoders
GAN
VAE
natural language processing
BiLSTM
CRF
semantic filtering
sentiment analysis
topic classification
dialogue systems
full-stack machine learning
deployment
data pipelines
explainability and fairness
Systems & Network Engineering
latency management
operating systems
disaster recovery
network protocols
linux kernel
device drivers
Programming & Software Development
Rust
Python
JavaScript
TypeScript
C/C++
Java
C#
Bash
REST APIs
serverless architecture
microservices
Git
testing
Algorithm Design, Data Structures & System Design
algorithm design
complexity analysis
search and optimization
numerical methods
parallel algorithms
Cloud & Cluster
AWS
S3
Lambda
API Gateway
CloudWatch
DynamoDB
IAM
CDK
Kubernetes
continuous integration & delivery
infrastructure as code
Computer Security
CVE
patch management
threat modeling
risk assessment
NIST standards
FIPS compliance
adversarial machine learning defenses
software development lifecycle
penetration testing
cloud security
Miscellaneous
certifications
traditional strategies
multilingual capabilities
business acumen
IEEE standards

- **Weighted Technical Value by Experience**



- **Weighted Technical Value by Skill**



I'm a full-stack SDE with expertise in cybersecurity, cloud, NLP & statistics.
At AWS, I build predictive automation tools for CVE evaluation, design scalable cloud infra, & handle threat detection for Amazon Linux.
My niche in AI, NLP & stats helps me apply computational statistics to security, threat modeling & security R&D.

I've integrated AWS CDK, Rust, Python & JavaScript to streamline processes, & became an expert in threat modeling over 1.5k CVEs for multiple Amazon Linux distributions.
I've actively contributed to system design to ensure the use of relevant info for practical security solutions.

With a solid foundation in CS from UCSD, I've built skill in NLP, recommender systems, cloud architectures & have published research.
I seek impactful roles to drive innovation at scale.

Links

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- Google LM Audio Summary (g-Drive) drive.google.com/file/d/1Kfpd49LE9jaoDZ9VL-BmTl9DS8O1-7uR/view
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- Art Portfolio - Instagram instagram.com/kp_artses
- YouTube (*coming soon*) youtube.com/channel/UCb7duYCP_dpm4lftWeiz3ow

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