

TECHNICAL SKILLS

Research Areas

- Deep Learning
- Reinforcement Learning
- Probabilistic Models
- Multi-Task Learning
- Zero-Shot Learning
- Neural Architecture Search

Frameworks

- PyTorch
- TensorFlow
- JAX
- Ray

Programming

- Python
- C++
- Julia
- CUDA

RESEARCH IMPACT

25+

Peer-reviewed publications

32

h-index

3

Best paper awards

10+

Patents

Dr. Rachel Zhang, Ph.D.

Senior AI Research Engineer

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RESEARCH SUMMARY

AI researcher with 12+ years of experience spanning classical machine learning, deep learning, and probabilistic modeling. Led groundbreaking research in reinforcement learning, generative models, and multi-task learning. Published 25+ papers in top-tier conferences (NeurIPS, ICML, ICLR). Strong track record of transitioning theoretical advances into practical applications in both academic and industrial settings.

PROFESSIONAL EXPERIENCE

DeepMind

Senior Research Scientist

2019 - Present

- Lead researcher on large-scale multi-task learning systems, developing novel architectures that improve cross-task generalization by 40%
- Pioneered new approach to zero-shot learning using contrastive training, published in NeurIPS 2023
- Built and led team of 6 researchers working on foundational ML models
- Developed novel regularization techniques for large language models, reducing catastrophic forgetting by 35%

Google Research

Research Scientist

2015 - 2019

- Developed probabilistic frameworks for robust ML, published in ICML 2018
- Created novel attention mechanisms for computer vision models, improving accuracy by 25%
- Led collaboration with Google Brain team on efficient training methods for transformer models
- Mentored 4 PhD interns and collaborated with academic institutions

GRANTS & AWARDS

NSF CAREER

Award (2013)

Google Faculty

Research Award (2014)

Amazon Research

Award (2018)

MIT TR35

35 Under 35 (2019)

ADDITIONAL SKILLS

Tools

- Git & Version Control
- Docker & Kubernetes
- Cloud Platforms (AWS, GCP)

Soft Skills

- Research Leadership
- Technical Writing
- Team Mentoring

PROFESSIONAL EXPERIENCE (CONTINUED)

Columbia University

Research Assistant Professor

2011 - 2015

- Published seminal work on Bayesian optimization methods (cited 1000+ times)
- Taught graduate-level courses in Machine Learning and Statistical Learning Theory
- Supervised 5 PhD students and 3 MSc students
- Secured \$500K in research grants for probabilistic ML research

EDUCATION

Columbia University

Ph.D. in Computer Science

2007 - 2011

Thesis: "Probabilistic Methods for Large-Scale Machine Learning"

Advisor: Prof. Michael Johnson

Outstanding Dissertation Award

Stanford University

M.S. in Computer Science

2005 - 2007

SELECTED PUBLICATIONS

"Scalable Multi-Task Learning with Efficient Cross-Task Transfer"

NeurIPS 2023 (Spotlight)

Zhang R., Smith J., et al.

"Zero-Shot Learning through Contrastive Optimization"

ICML 2022 (Best Paper Award)

Zhang R., Brown A., et al.

"Probabilistic Frameworks for Robust Deep Learning"

ICLR 2021

Zhang R., Davis M., et al.

PROFESSIONAL SERVICE

- Associate Editor, Journal of Machine Learning Research (2020-Present)
- Workshop Organizer, "Future of Multi-Task Learning" at NeurIPS 2023
- Board Member, Women in Machine Learning (WiML)
- Program Committee Member for NeurIPS 2022-2024