MOONTAE LEE [mu:nte li:]

Vice President, LG AI Research

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I build and lead research programs that **make hard domain problems measurable**. My work combines human evaluation, model-based judges, and test-time scaling to turn expert knowledge into learning signals for AI agents. I remain hands-on in evaluation, adaptive reasoning, and research agents, connecting methods to professional workflows and deployment.

RESEARCH LEADERSHIP AND DELIVERY

LG AI Research

2025–present **Vice President and Head of the Superintelligence Lab**

Lead two teams of approximately **30 researchers and engineers**.

- **EXAONE Foundry.** Scale AI capabilities across professional domains. Deployed a **32B model** for Korea's Ministry of Food and Drug Safety (MFDS), matching 2–3T models. National Pension Service (NPS) work uses workflow prediction and refinement for Codex CLI–comparable performance.
- **Project ATLAS.** Multi-condition, multi-hop, multimodal agentic search for USPTO patent search, review, and dispute support. **38.5% less search time and 4.5% higher performance versus Codex**. Closed beta underway.
- **Sovereign AI competitions.** Post-training for legal, financial, and scientific agentic tasks on EXAONE 5.0 (30B MoE) and K-EXAONE 3.0 (750B MoE). Earlier milestones include Notable AI recognition and K-EXAONE 1.0 ranked #1 in Korea.

2023–2024 **Research Fellow and Head of the Advanced Machine Learning Lab**

Led three labs of approximately **90 researchers and engineers**.

- **EXAONE 2.0–3.5 (8B–32B).** LLM-based RAG development initiated in early 2022. **EXACODE (8B–32B).** Continual pretraining for a domain-specific coding agent deployed at LG Electronics.
- **ChatEXAONE.** Prototype development, later deployed across **12+ LG affiliates, serving 60K+ users**.

2021–2022 **Head of the Fundamental Research Lab**

Led three international teams of approximately **40 researchers and engineers**, connecting Toronto, Ann Arbor, and Seoul. Established AI4Science research programs in molecular modeling and drug discovery. Foundational contributions to pre-training and post-training for **EXAONE 1.0 (175B–300B)**.

2019–2021 **Microsoft Research Redmond** *Visiting Scholar, then Research Scientist*

Deep Learning Group. Concept-based language modeling, tensor-product reasoning, and large-scale training with MT-DNN (340M) and T5 (11B).

2018–present **University of Illinois Chicago** *Assistant Professor (concurrent)*

Information and Decision Sciences. Counterfactual evaluation of information monopoly and causal inference for ranking and helpfulness. Misinformation research and monetary policy uncertainty with the World Bank.

EVALUATION AND REASONING PAPERS

[C75] **MERIT: From Preference Traces to Evaluation Standards** EACL 2027, accepted
Induces community-specific metrics, rubrics, and aggregation weights to train expert-aligned evaluator models.

[C68] **DEER: Evaluating Deep Research Agents on Expert Report Generation** ICML 2026
Expert-developed report criteria and verification of both cited and uncited claims.

[C67] **Root-token Policy Optimization for Adaptive Thinking** ACL 2026
Trains the initial think-or-answer decision to adapt reasoning effort to a query.

[J3] **Process Reward Models That Think (ThinkPRM)** TMLR 2026
Generative step-by-step verification and reward-guided search using 1% of PRM800K's process labels.

[C58] **MLRC-Bench: Can Language Agents Solve Machine Learning Research Challenges?** NeurIPS 2025
Tests research agents through executable experiments and held-out results across seven ML challenges.

[C45] **The BiGGen Bench** NAACL 2025
Best Paper Award. Instance-specific evaluation criteria across 77 tasks and nine capabilities.

[C43] **Prometheus 2** EMNLP 2024
Open evaluator models supporting custom criteria, direct assessment, and pairwise ranking.

ADDITIONAL AWARDED PAPERS

[C55] **Mind the Blind Spots: A Focus-Level Evaluation Framework for LLM Reviews**. EMNLP 2025 **SAC Highlights Award**.

[C48] **Hierarchical Decomposition Framework for Steiner Tree Packing Problem**. ICORES 2025 **Best Student Paper Award**.

[C34] **Understanding the Capabilities and Limitations of Large Language Models for Cultural Commonsense**. NAACL 2024 **Social Impact Award**.

Earlier recognition includes the **INFORMS DMDA Best Student Paper Award** (2017) and **Amazon Graduate Research Symposium Award** (2017; selected as one of two student speakers).

EDUCATION

Cornell University PhD, Computer Science 2012–2018
Stanford University MS, Computer Science 2009–2012
Sogang University BS, Computer Science · BS, Mathematics · BA, Psychology