

# Peiyang Song

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## EDUCATION

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- ❑ **California Institute of Technology (Caltech)** Pasadena, CA  
*B.S. in Computer Science* Sep. 2024—Present
- ❑ **University of California, Santa Barbara (UCSB)** Santa Barbara, CA  
*B.S. student in Computer Science, College of Creative Studies (CCS) Honors* Sep. 2022—June 2024  
Advisors: Prof. Richert Wang, Prof. Phill Conrad  
GPA: 4.0/4.0, mostly A+

## RESEARCH INTERESTS

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Machine Learning • Natural Language Processing • Automated Reasoning • Neuro-Symbolic AI

## PUBLICATIONS

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| Preprint     | <b>Temporal Activation and Real-Soft-Max Functions</b><br><u>Peiyang Song</u> , Rhys Gretsches, Jeremy Lau, and Timothy Sherwood<br><i>In submission</i>   |
| Preprint     | <b>In-Context Learning May Not Elicit Trustworthy Reasoning: A-Not-B Errors in Pretrained Language Models</b><br>Pengrui Han*, <u>Peiyang Song</u> *, Haoifei Yu, Jiaxuan You (* Equal Contribution)<br><i>ICML 2024 LLM-Cognition Workshop</i><br><i>In submission</i>                              |
| Preprint     | <b>Towards Large Language Models as Copilots for Theorem Proving in Lean</b><br><u>Peiyang Song</u> , Kaiyu Yang, and Anima Anandkumar<br><i>NeurIPS 2023 MATH-AI Workshop</i><br><i>In submission</i>   |
| ASPLOS 2024  | <b>Energy Efficient Convolution with Temporal Arithmetic</b><br>Rhys Gretsches, <u>Peiyang Song</u> , Advait Madhavan, Jeremy Lau, and Timothy Sherwood<br><i>ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2024</i>               |
| NeurIPS 2023 | <b>LeanDojo: Theorem Proving with Retrieval-Augmented Language Models</b><br>Kaiyu Yang, Aidan Swope, Alex Gu, Rahul Chalamala, <u>Peiyang Song</u> , Shixing Yu, Saad Godil, Ryan Prenger, and Anima Anandkumar.<br><i>Neural Information Processing Systems (NeurIPS), 2023, Oral presentation</i> |

## RESEARCH EXPERIENCES

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- ❑

**Stanford University**

*Researcher @ Computation & Cognition Lab (CoCoLab)*

Advisor: Prof. Noah Goodman (Stanford)

Palo Alto, CA

June 2024—Present
- ❑

**California Institute of Technology (Caltech)**

*Research Fellow @ Anima AI+Science Lab*

Advisors: Prof. Anima Anandkumar (Caltech), Dr. Kaiyu Yang (Meta)

Pasadena, CA

Feb. 2022—Present
- ❑

**University of California, Santa Barbara (UCSB)**

*Researcher @ ArchLab*

Advisors: Prof. Tim Sherwood (UCSB), Dr. Jeremy Lau (Google)

Santa Barbara, CA

Nov. 2022—June 2024

## ACADEMIC SERVICE

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- ❑

**Reviewer**

- Conference on Neural Information Processing Systems (NeurIPS)
  - Conference on Neural Information Processing Systems (NeurIPS) MATH-AI Workshop
  - International Conference on Machine Learning (ICML) LLM-Cognition Workshop

## AWARDS & HONORS

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- ❑

**Early Research Scholarship**

Aug. 2023
- ❑

**Caltech SURF award**

Apr. 2023
- ❑

**UCSB Creative Studies Honors**

Sep. 2022

## LANGUAGES

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- **Programming Languages:** C++, Python, Lean, Java, C, PASCAL, OCaml, C#
- **Natural Languages:** English (TOEFL 117/120), Mandarin (Native)