National University of Singapore August 2020 – December 2023 Bachelor of Computting (Information Security), Highest Distinction Singapore Publications **Instance-Hiding Interactive Proof** 2024Changrui Mu, Prashant Nalini Vasudevan TCC2024 [ECCC], [IACR] Strong Batching for Non-Interactive Statistical Zero-Knowledge 2024Changrui Mu, Shafik Nassar, Ron D. Rothblum, Prashant Nalini Vasudevan Eurocrypt 2024 [ECCC], [IACR] **Research Experience Interactive Proof Research** August 2022 - Present Student; Research Assistant, supervised by Dr. Prashant Nalini Vasudevan (NUS) Singapore • Explored the power of instance-hiding interactive proof. Broaden understanding about this class. We also researched the connection between such scheme and the influential concept of Randomized Encodings. • Explored on minimum assumption for instantiating Fiat-Shamir and Correlation-Intractable Hash Functions. Zero Knowledge Proof Research May 2023 – August 2023 Visiting Student Researcher, supervised by Dr. Ron Rothblum (Technion) Haifa, Israel • Explored the power and limit of statistical witness indistinguishability. • Contribute to the construction of a strong batching for Non-Interactive Statistical Zero-Knowledge Proof (NISZK-batching). Research on the Mechanisms in Fear Memory Consolidation May 2022 – August 2022 Participant, Supervised by Dr. Cora Sau Wan Lai (HKU) Hong Kong(Remote) • Publication as third author: Title: Selective Modulation Of Fear Memory In Non-Rapid Eye Movement Sleep Authors: Qiyu Zheng, Yuhua Huang, Changrui Mu, Xiaoqing Hu\*, Cora Sau Wan Lai\* Journal: Advanced Science 2024 • Applied a modified pool adjacent violators algorithm (PAVA) to conduct isotonic regression, improving the accuracy of the data analysis. • Designed a labeling process that utilized deconvolution and filtered out "partial spikes" signals to improve the accuracy of spiking event detection. • Based on the experimental design, proposed possible assumptions and classified neuronal ensembles into multiple groups

for statistical tests to identify correlations between neuron activities and behavior test results. **Teaching Experience** 

Education

8F	
Lead Teaching Assistant	August 2023 – Present
CS4236: Cryptography Theory and Practice, by Dr. Prashant Nalini Vasudevan (NUS)	Singapore
• Assisted in designing and setting up problem sets for students.	
• Conducted Q&A sessions and tutorials to deepen students' understanding.	
• Participated in grading assignments, ensuring timely and accurate feedback.	
Lead Teaching Assistant	August 2023 – Present
CS3235: Computer Security, instructed by Dr. Reza Shokri (NUS)	Singapore
• Collaborated in creating and setting up problem sets.	
• Facilitated Q&A sessions and tutorials to enhance learning outcomes.	

• Aided in the grading of assignments, maintaining a high standard of evaluation.

### Working Experience

### Binance

Smart Contract Security Engineer (Part-time Intern)

- Conducted comprehensive reviews of newly disclosed vulnerabilities in smart contracts, summarizing the underlying causes of each exploit.
- Performed meticulous security audits on both internal and external smart contracts, generating high-quality analytical reports.
- Employed specialized scanning tools to identify vulnerabilities in deployed smart contracts and issued timely risk warnings.

## TikTok, ByteDance

Backend Engineer Intern (Trust and Safety)

- Migrated and refactored GIF logic in direct messages on TikTok.
- Provided support for private message-related safety inquiries on TikTok.
- Conducted dry runs of new models in different regions.
- Assisted with business account message auto-reply logic.

# Invited Talks

IEEE East Asian School of Information Theory (EAS	SIT2024)	July 2024
Title: Strong Batching for Non-Interactive Statistical Zero-Knowle	edge, Poster Presentation	Shonan Village Center, Japan
Eurocrypt2024 Main Session Title: Strong Batching for Non-Interactive Statistical Zero-Knowle	edge	May 2024 <i>ETH</i>
Eurocrypt2024 Rump Session Title: If Verifier Also Wants Privacy		May <b>2024</b> <i>ETH</i>
<b>NUS AlgoTheory Seminar</b> <i>Title: Strong Batching for Non-Interactive Statistical Zero-Knowledge</i>		<b>April 2024</b> <i>NUS</i>
NTU Cryptography Seminar Title: Batch Verification for Statistical Zero-Knowledge Proofs		March 2024 Nanyang Technological University
IJTCS2023 Undergraduate Forum Title: Non-Interactive Statistical Zero Knowledge Proof		<b>August 2023</b> University of Macau
Certificate & Reward		
CS198.2x: Blockchain Technology, UCBerkeley Issuer: edX (UCBerkeley) 2nd Place Enthusiast, Singapore Blockchain In- novation Challenge	Dean's List Issuer: NUS, SOC IEEE EASIT2024 Oution Award	utstanding Poster Presenta-

Issuer: IEEE East Asian School of Information Theory Cryptography I, Dan Boneh Coursera (Stanford)

Issuer: NUS, SOC Technical Skills

Issuer: NUS, SBIP

**Top Student in Computer Security** 

Languages: Solidity, Go, Java, C++/C, Python, JavaScript/HTML/CSS, SQL, Rust.

**Developer Tools:** Ganache, Tableau, Looker, VS Code, IntelliJ IDEA, Vim, Fiddler, Wireshark, Kali Linux, VMware. **Technologies:** Natural Language Processing (NLP), Spring Boot, MySQL, Cryptography, Scrapy, Blockchain, Redis, Time Series Database (TS-Database), Message Queue (MQ).

#### August 2022 – August 2023 Singapore (Remote)

#### May 2022 – August 2022

Singapore