

# Keyang Yu

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## Research Interests

My research focuses on designing data-driven computer systems with an emphasis on improving Cybersecurity and User Privacy of Cyber-Physical Systems (CPS) and the Internet of Things (IoT). My most recent research aims at building new AI-powered computer systems to enhance the security and privacy of CPS/IoT, including smart homes, smart buildings and edge computing networks.

## Education

- 2022-present **Ph.D. candidate, Computer Science**, *Colorado School of Mines*, Golden, CO, Research and Teaching Assistant, Advisor: Dr. Dong Chen
- 2019-2021 **Ph.D. candidate, Computer Science**, *Florida International University*, Miami, FL, Research and Teaching Assistant, Advisor: Dr. Dong Chen
- 2017 **Bachelor of Engineering, Telecommunications Engineering**, *Southeast University*, China

## Publications

### Conferences

- EWSN'24 Su Wang, **Keyang Yu**, Qi Li, Dong Chen. "I Still See You: Why Existing IoT Traffic Reshaping Fails". In Proceeding of the 21st International Conference on Embedded Wireless Systems and Networks (EWSN 2024), December 10-13, 2024, Abu Dhabi, UAE.
- ICCCN'23 **Keyang Yu**, Dong Chen. "PAROS: The Missing "Puzzle" in Smart Home Router Operating Systems". In Proceeding of the 32nd International Conference on Computer Communications and Networks (ICCCN 2023), July 24-26, 2023, Honolulu, Hawaii, USA, Acceptance Rate = 28%.
- CNS'22 Qi Li, **Keyang Yu**, Dong Chen, Mo Sha and Long Cheng. "TrafficSpy: Disaggregating VPN-encrypted IoT Network Traffic for User Privacy Inference". In Proceedings of the 10th IEEE Conference on Communications and Network Security (CNS 2022), October 3-5, 2022, Austin, Texas, USA. Acceptance Rate = 35.25%.
- IPSN'21 **Keyang Yu**, Qi Li, Dong Chen, Mohammad Rahman, Shiqiang Wang. "PrivacyGuard: Enhancing Smart Home User Privacy". In Proceedings of the 20th ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN 2021), May 18-21, 2021, Nashville, Tennessee, Acceptance Rate = 24.76%.

IGSC'20 Qi Li, **Keyang Yu**, Dong Chen. "SolarDiagnostics: Automatic Rooftop Solar Photovoltaic Array Damage Detection". In Proceedings of the 11th IEEE International Green and Sustainable Computing Conference (IGSC 2020), Oct 19-22, 2020, Virtual Event, USA, Acceptance Rate = 23%.

#### Journals

ACM TOIT **Keyang Yu**, Qi Li, Dong Chen, Liting Hu. "Safeguarding User-Centric Privacy in Smart Homes". ACM Transactions on Internet Technology (ACM TOIT), 2024.

#### Workshops

IGSC'20 **Keyang Yu**, Dong Chen. "SmartAttack: Open-source Attack Models for Enabling Security Research in Smart Homes". In Proceedings of the 11th IEEE International Green and Sustainable Computing Workshops (IGSC 2020), Oct 19-22, 2020, Virtual Event, USA.

#### Posters

BuildSys'20 Qi Li, **Keyang Yu**, Dong Chen. "Automatic Damage Detection on Rooftop Solar Photovoltaic Arrays". In Proceedings of the 7th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys'20), November 18-20, 2020, Virtual Event, Japan.

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### Teaching Assistant

CSCI 598 Game Development, graduate/undergraduate level (Spring'23 @ Mines)  
CSCI 477

CSCI 442 Operating System, graduate/undergraduate level (Fall'22 @ Mines) 140 students

COP 4610 Operating System, undergraduate level (Fall'21 @ FIU)

COP 4610 Operating System, undergraduate level (Summer'21 @ FIU)

COP 4710 Database Management, undergraduate level (Fall'20 @ FIU)

COP 4610 Operating System, undergraduate level (Fall'20 @ FIU)

CAP 4770 Intro to Data Mining, undergraduate level (Spring'20 @ FIU)

COP 4710 Database Management, undergraduate level (Spring'20 @ FIU)

COP 4610 Operating System, undergraduate level (Fall'19 @ FIU)

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### Student Mentoring

Krithi Gopalabhatla (High School Summer Internship 2023)

Dhruva Sogal (Mines, MURF scholar 2022-2023)

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### Services

Reviewer Journal of Intelligent & Fuzzy Systems

External 22nd ACM Workshop on Privacy in the Electronic Society, in conjunction with ACM

Reviewer CCS 2022

External IEEE Transactions on Parallel and Distributed Systems

Reviewer

External Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technolo-  
Reviewer gies

TPC 6th ACM Workshop on Data: Acquisition to Analysis, in conjunction with ACM  
SenSys/BuildSys 2023

Artifact 5th ACM Workshop on Data: Acquisition to Analysis, in conjunction with ACM  
Evaluation SenSys/BuildSys 2022

Mentor Computing-Mines Affiliates Partnership Program,2022,2023

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## Diversity and Outreach Activities

Co-Organizer 2023 Exploring IoT: Data Security and Privacy Camp

Presenter CyberSlam 2023