

Chuyang Gao

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EDUCATION

- Ph.D. Student in Computer Science** 2022 – 2026
University of Bern, Switzerland
Communication and Distributed Systems Group; Supervisor: Prof. Torsten Braun
- Doctoral Coursework in Mathematics (Diploma of Completion Awarded)** 2020 – 2022
Southern University of Science and Technology, Shenzhen, China
- Visiting Student** 2017 – 2018
Institute of Computing Technology, Chinese Academy of Sciences, Beijing, China
Key Laboratory of Network Data Science and Technology; Supervisor: Zhibin Zhang
- M.Sc. in Computer Science** 2016 – 2019
Beijing University of Posts and Telecommunications, Beijing, China
State Key Laboratory of Networking and Switching Technology; Supervisor Group: Academician Junliang Chen
Thesis: Design and Implementation of Real-Time and Historical Multi-View Trend Display System (CN, EN)
- B.Eng. in Communication Engineering** 2012 – 2016
Shandong University, Weihai, China
School of Airspace Science and Engineering (formerly School of Mechanical and Information Engineering)
Thesis: Android Real-Time Data Publishing Software (CN, EN); Supervisor: Chenghui Liang

PUBLICATIONS

Journal

- C. Gao* and T. Braun, “Dual-Engine Intelligent Caching: A Joint Optimization Framework for 360° Mobile VR Video Edge Caching,” *IEEE Journal on Selected Areas in Communications*, vol. 43, no. 10, pp. 3532–3547, Oct. 2025. doi:10.1109/JSAC.2025.3574596

Conference

- C. Gao* and T. Braun, “Two-Stage Hybrid Edge Caching Framework for 360° VR Video,” in *Proc. IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, Fort Worth, TX, USA, 2025, pp. 1–10. doi:10.1109/WoWMoM65615.2025.00015 (**Best Paper Award**)
- Y. Yue, C. Gao, et al., “Delay-Aware and Resource-Efficient VNF Placement in 6G Non-Terrestrial Networks,” in *Proc. IEEE Wireless Communications and Networking Conference (WCNC)*, Glasgow, United Kingdom, 2023, pp. 1–6. doi:10.1109/WCNC55385.2023.10118893 (**Best Paper Award**)
- C. Gao*, S. Zhao and B. Cheng, “Design and Implementation of Real-Time and Historical Multi-View IoT Trend Display and Control System,” in *Proc. IEEE Joint International Information Technology and Artificial Intelligence Conference (ITAIC)*, Chongqing, China, 2019, pp. 1078–1083. doi:10.1109/ITAIC.2019.8785795

Manuscripts Under Review

- C. Gao* and T. Braun, “Moreau Envelope-Based Computational Acceleration for Online Dual-Engine 360° VR Video Caching.”
- C. Gao* and T. Braun, “Game-Theoretic Incentive Mechanism Design for 360° Video Edge Caching.”

*Corresponding author.

RESEARCH EXPERIENCE

Networking for Immersive Communications (NICO) 2022–2026
Research Assistant, Communication and Distributed Systems Group, University of Bern, Adv. Torsten Braun

- **Low-Latency Support for Immersive Communications**
Funded by Swiss National Science Foundation (SNSF), Project No. 204447

Continual Learning and Catastrophic Forgetting 2020–2022
Research Assistant, Department of Computer Science and Engineering, SUSTech, Adv. Jianguo Zhang

- **Orthogonal Feature Subspace Validation**

Internet of Things Architecture

2016–2019

Research Assistant, State Key Laboratory of Networking and Switching Technology, BUPT

- **IoT Situation Monitoring and Control System** (2017–2019, Adv. Shuai Zhao); Wu Wenjun AI Technology Invention Award (First Prize, 2019); Paper
- **IoT Middleware** (2016–2017, Adv. Chuanchang Liu); China Communications Association Technical Invention Award (First Prize, 2018)
- **Prison Indoor Positioning Platform** (08/2016–11/2016, Adv. Chuanchang Liu); Code

Graph Database and Deep Learning OCR

2017–2018

Research Assistant, Institute of Computing Technology, Chinese Academy of Sciences, Adv. Zhibin Zhang

- **ArangoDB + CTPN (Docker)**

HONORS & AWARDS

- **Best Paper Award**, IEEE WoWMoM 2025, Fort Worth, USA
- **Best Paper Award**, IEEE WCNC 2023, Glasgow, UK
- **First Prize**, Wu Wenjun Artificial Intelligence Technology Invention Award, 2019 (Graduate Research Contributor)
- **First Prize**, Technical Inventions Category, China Communications Association Award, 2018 (Graduate Research Contributor)
- **Graduate Scholarships**, Beijing University of Posts and Telecommunications, 2016–2018 (First-Class 2018; Second-Class 2016 & 2017)
- **Second Prize (University Level)**, 14th “Challenge Cup” National Undergraduate Extracurricular Academic and Scientific Works Competition, Shandong University, 2014, for *An IoT-Based Greenhouse Monitoring and Control System*

TEACHING AND ADVISING

Teaching Experience

University of Bern, Bern, Switzerland

- Teaching Assistant, *Internet of Things* (433470), Fall 2025
- Teaching Assistant, *Internet of Things* (11043), Spring 2023

Southern University of Science and Technology, Shenzhen, China

- Teaching Assistant, *Artificial Intelligence B* (CS303B), Fall 2021
- Teaching Assistant, *Research Methods*, Fall 2020

Supervision of BSc Theses

- Ilyas Noa Woo, BSc Thesis, University of Bern, *Evaluation of Forwarding Strategies in Named Data Networking: A Simulation-Based Approach*, November 2025

SERVICES & PROFESSIONAL MEMBERSHIPS

Professional Memberships

- Student Member, IEEE

Journal Reviewer

- *IEEE Journal on Selected Areas in Communications (JSAC)*
- *Digital Communications and Networks*

Conference Reviewer

- IEEE International Conference on Communications (ICC), 2026
- Wireless On-Demand Network Systems and Services Conference (WONS), 2025
- IEEE International Conference on Network Softwarization (NetSoft), 2025
- IEEE Global Communications Conference (GLOBECOM), 2025
- IEEE Global Communications Conference (GLOBECOM), 2023

TALKS

- **CDS Seminar (Fall 2025)**, University of Bern, Bern, Switzerland, Nov. 24, 2025. *Game Theory for 360° Video Edge Caching*
- **BENEFRI Summer School 2025**, Prangins, Switzerland, Aug. 29, 2025. *Computational Acceleration for Deep Reinforcement Learning and 360° VR Video Caching*
- **IEEE WoWMoM 2025**, Fort Worth, TX, USA, May 28, 2025. *Two-Stage Hybrid Edge Caching Framework for 360° VR Video*
- **CDS Seminar (Spring 2025)**, University of Bern, Bern, Switzerland, May 12, 2025. *XAI and DRL for 360° VR Video Edge Caching*
- **CDS Seminar (Fall 2024)**, University of Bern, Bern, Switzerland, Sept. 23, 2024. *FoV-Adaptive 360° Video Streaming and In-Network Caching with Network Coding Enabled Named Data Networking*
- **BENEFRI Summer School 2024**, Brienz, Switzerland, Sept. 3, 2024. *Dual-Engine Intelligent Caching: A Joint Optimization Framework for 360° Mobile VR Video Edge Caching*
- **CDS Seminar (Spring 2024)**, University of Bern, Bern, Switzerland, Feb. 26, 2024. *Dual-Engine Intelligent Caching: A Joint Optimization Framework for 360° Video Edge Caching*
- **BENEFRI Summer School 2023**, Les Rasses / Sainte-Croix, Switzerland, Aug. 9, 2023. *Reinforcement Learning-Based Joint Optimization for Edge Caching in Mobile Immersive Communication*
- **CDS Seminar (Spring 2023)**, University of Bern, Bern, Switzerland, Apr. 24, 2023. *Amalgamation of Optimization and Reinforcement Learning Algorithms for 360° Video Edge Caching in Immersive Communication Networks*
- **CDS Seminar (Fall 2022)**, University of Bern, Bern, Switzerland, Oct. 24, 2022. *Related Work on Delay Minimization in Immersive Communication*

SUPERVISED RESEARCH

Research on Game Theory	2021 — Advisor: Andy Liu, SUSTech
Research on Financial Econometrics	2021 — Advisor: Ti Zhou, SUSTech
Research on Bayesian Statistics Theory	2021 — Advisor: Jingheng Cai, Sun Yat-sen University
Research on Non-smooth Optimization Theory	2020 — Advisor: Jin Zhang, SUSTech
Scientific Computing	2020 — Advisor: Alexander Kurganov, SUSTech
Data Stream Processing System (Flink & Kafka)	2021 — SUSTech
Epsilon Transformation File Execution Code Tracking	2021 — SUSTech
Predicting Loan Credit Risk with Apache Spark	2017 — Advisor: Junping Du, BUPT
End-to-End Digital Modulation Classification and Demodulation	2017 — BUPT
Anime Entry Search Engine	2016 — Advisor: Lei Li, BUPT
Broadband Communication Network Experiments	2016 — Advisor: Xin Li, BUPT
Experiment on PJSIP and VOIP	2017 — Advisor: Yue Ma, BUPT
Android Real-time Data Publishing System	2015 — Advisor: Chenghui Liang, SDU
Image Communication System Simulation (MATLAB)	2015 — Advisor: Chengyou Wang, SDU
Intelligent Greenhouse System based on IoT	2015 — Advisor: Qingfu Du, SDU
Simple Graphical Editor based on MFC	2014 — Advisor: Chenghui Liang, SDU
Keyboard Typing Game based on Windows SDK	2014 — Advisor: Chenghui Liang, SDU
Speech Signal Processing Course Project	2014 — Advisor: Ruolun Liu, SDU
Embedded System Development (FPGA)	2014 — Advisor: Sumei Li, SDU

Technical Strengths

LaTeX, TikZ

Work Experience

Variational Network Technology Co., Ltd. — Founder	2021 – 2022
Micro Data Information Technology Co., Ltd. — R&D Intern	07/2016 – 08/2016

HIKING AND SNOWBOARDING

Hiking: Mürren (Lauterbrunnen), Iseltwald to Giessbach, Le Chasseron, Switzerland

Snowboarding: Elsigentalp (Lenk), Sörenberg (Lucerne), First, Männlichen, Switzerland