

Chuyang Gao

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EDUCATION

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

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.

RSEARCH EXPERIENCE

Networking for Immersive Communications (NICO) Research Assistant, Communication and Distributed Systems Group, University of Bern, Adv. Torsten Braun	2022–2026
<ul style="list-style-type: none">• Low-Latency Support for Immersive Communications Funded by Swiss National Science Foundation (SNSF), Project No. 204447	

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

Internet of Things Architecture

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

2016–2019

- 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

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

2017–2018

- 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: Elsigenalp (Lenk), Sörenberg (Lucerne), First, Männlichen, Switzerland