# Qiong LIU

Chinese citizenship
French residency *(carte de séjour pluriannuelle)*

Enseignante-Chercheuse (Assistant Professor)
ETIS, CY Cergy Paris University
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## Research Interests

- AI/ML for softwarized networks, MLOps, 6G resource orchestration, low-latency protocol optimization, and stochastic modeling for IoT systems

## Professional Experience

2024.09–present **Assistant Professor**
ETIS UMR 8051, CY Cergy Paris University — Cergy, France

- Responsibilities: 50% laboratory research and 50% teaching (192 required hours)

2022.10–2024.09 **Postdoctoral Researcher**
INFRES (Computer Science and Networks), Télécom Paris — Palaiseau, France

- Research theme: Artificial Intelligence applied to high-speed software networks

## Academic Education

2018.11–2022.6 **Ph.D. in Telecommunications**
CNRS 6164, INSA Rennes — Rennes, France

- Thesis Title: Performance Analysis of Dynamic Downlink Cellular Networks
- Supervisors: Philippe Mary, Jean-Yves Baudais
- Jury of oral defense: L. Clavier (Chair), M. Di Renzo (Referee), L. Mroueh (Referee), M. Coupechoux

2015.09–2018.10 **M.Sc. in Telecommunication**
Xidian University — Xi'an, China

2011.09–2015.06 **Bachelor in Electronic Information and Technology**
Shandong University — Shandong, China

## Teaching

- Total validated: 273 hours.
- 2024-2025 [CY Cergy Paris University]:
  - Advanced Networks (M2, Lec+Lab, 64h), Probability & Statistics for Networks (M1, Lec+Tut, 43.5h),
  - Mobile Programming (B3, Lec+Lab, 75h), Java & OOP (Eng3, Lec+Lab, 70h)
- 2023-2024 [Télécom Paris]:
  - Access and Scheduling (Eng3, Lec+Lab, 21h), IP Networks (Lec, 6h), TinyML - Research Initiation (Eng1, Project, 22.5h)

## Mentoring

- (Co-)mentoring of Master interns and doctorantes:
- 2024.09–present, J.k. Lin (M1), "MLOps: Digit Recognition Pipeline with Kubeflow and Kubernetes", CYU, France
- 2024.03–2024.09, Y. Qiu (M2), "MLOps: Case Study on ML Pipeline Platform", Télécom Paris
- 2024.04–2024.06, H.Verninas (Eng3), "Design of a PPO-based RL Algorithm", Télécom Paris
- 2024.01–present, X.Y. Guo (Doctorante) , M1, "Stochastic Geometry-based MCS Adaptation for Uplink Cellular Networks", Southeast University, China

## Scholarly Review Activities

- IEEE Communications Magazine, IEEE INFOCOM 2025, IEEE SmartGridComm (TPC), 2024
- IEEE ICC 2024, IEEE CloudNet 2023, IEEE Globecom 2023
- IEEE Transactions on Wireless Communication, 2022
- ACM Transactions on Modeling and Performance Evaluation of Computing Systems, 2022

## Seminar

- "Virtualization & AI: how to monitor, diagnose and optimize NFV/SDN-enabled networks with AI technologies?", Équipes Traitement de l'information et systèmes (ETIS), 04/06/2024, CY Cergy Paris University, France.
- "Coverage and Stability Analysis of Cellular Network with Temporal Traffic", Laboratory for information, networking and communication sciences (LINCS), 16/11/2022, Paris, France.

## Languages & Programming skills

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|---|---|
| Languages | Chinese: mother tongue, English: proficiency, French: intermediate |
| Programming | Python, Java, CPLEX + Gurobi (experienced), MATLAB, C, BASH |
| Frameworks | PyTorch, TensorFlow, Intel DPDK, Intel PCM, Kubernetes/Kubeflow, Android Studio |

## Publications

**Under revision**

- **Q. Liu***, T. Zhang*, L. Linguaglossa, "Toward non-intrusive performance prediction and analysis in high-speed software data plane", under revision in IEEE/ACM Transactions on Networking.
- C. Zheng, **Q. Liu**, M. Hemmatpour, T. Zhang, and N. Zilberman, "Bontent Attacks from Birth to Grave - An In-network AI/ML Approach, submitted to IEEE Communications Magazine.

**2025**

- X. Guo, **Q. Liu***, S. Wang, L. You. "Stochastic geometry-based MCS adaption for uplink networks," 23th IEEE Wireless Communications and Networking Conference (WCNC).

**2024**

- **Q. Liu**, T. Zhang, M. Hemmatpour, *et al, "Operationalizing AI/ML in Future Networks: A Bird's Eye View from the System Perspective", IEEE Communications Magazine. [Impact Factor: 11.2, Q1]*
- **Q. Liu**, T. Zhang, L. Linguaglossa, "Non-invasive Performance Diagnosis of Virtual Network Functions with Limited Knowledge" *IEEE INFOCOM, 2024, Vancouver, Canada, pp. 1-10. [Acceptance 19%], [Rank: Q1].*
- **Q. Liu**, T. Zhang, Walter Cerroni, L. Linguaglossa "Proactive VNF Redeployment and Traffic Routing for Modern Telco Networks," accepted to *IEEE NetSoft, 2024, pp. 1-9.[Acceptance 24%], [Best Paper Runner-up Award]*

**2023**

- **Q. Liu**, C. Wang, C. Zheng, "Distributed Decisions on Optimal Load Balancing in Loss Networks," *the 21th Wiopt, 2023, Singapore, pp.1-8. [Acceptance 30%], [H-Index:20]*

**2022**

- **Q. Liu**, J. -Y. Baudais and P. Mary, "Transmission Policies Based on Learning by Reinforcement and Stochastic Geometry for Dynamic Cellular Networks," *the 29th GRETSI 2022, France, pp.1-4.*
- **Q. Liu**, J. -Y. Baudais and P. Mary, "Analysis of the Epsilon-stable Region in Dynamic Downlink Cellular Networks," *IEEE 94rd Vehicular Technology Conference (VTC), 2022, Helsinki, Finland, pp.1-6., [H-Index:127]*

**2021**

- C. Wang, **Q. Liu**,"Load Balancing Game in Loss Communication Networks," *the 20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2021, London, England, pp.1-8*
- **Q. Liu**, J. -Y. Baudais and P. Mary, "Queue Analysis with Finite Buffer by Stochastic Geometry in Downlink Cellular Networks," *IEEE 93rd Vehicular Technology Conference (VTC), 2021, Helsinki, Finland, pp.1-5, [H-Index:127]*
- **Q. Liu**, J. -Y. Baudais and P. Mary, "A Tractable Coverage Analysis in Dynamic Downlink Cellular Networks, *IEEE 21st International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), 2020, (virtual) USA, pp.1-6. , [H-Index:40]*