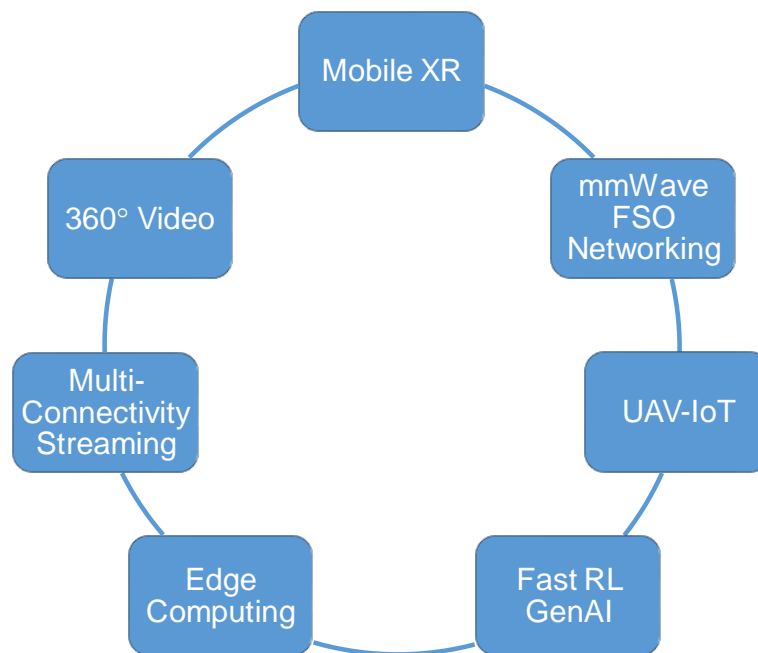


Laboratory for Next Generation AI-Enabled Wireless XR Network Systems and Societal Applications



Staff (student, postdoc, internship, developer) Openings

Multiple (graduate, postdoc, internship, developer) openings are available in the Laboratory for NextG AI-enabled Wireless XR Network Systems and Societal Applications at NJIT directed by Professor Jacob Chakareski, supported by federal/industry/university funded cutting-edge projects. The lab is hosted in the Ying Wu College of Computing at the New Jersey Institute of Technology (NJIT). It features state-of-the-art equipment: large 3D immersion displays, high-definition visual/range sensors, virtual and augmented reality (XR) head-mounted displays, UAV-IoT devices, and 5G/LTE-A MIMO SDR boards. The graduate positions are fully funded (competitive academic year stipend/tuition and summer support) for a period of four years and are available immediately. The postdoc openings are organized on a multiple-year basis, and renewed every year subject to meeting performance expectations. The developer openings feature flexible working hours, require experience in Unity 3D, C#, and JavaScript, and can be part time/remote work. The internship positions are generally available in the summer, but can be adapted to other periods of the year, with mutual agreement.

Students at the B.S./M.S. level with background in electrical/computer engineering, computer science/applied computing, or applied mathematics are encouraged to apply. The accepted candidates will work on cutting edge research in one or multiple of the following areas: mobile XR systems and synergies with computer vision, machine learning and HCI; physics-aware reinforcement learning (RL) and applications; 5G edge computing and network architectures; UAV-IoT sensing and networking; millimeter wave/free-space optical mobile networking; multi-connectivity scalable 360-degree video streaming; deep RL for AI-enabled networks; neural enhanced video streaming; coding and communication of 3D scene representations. We also explore novel interdisciplinary applications in remote sensing, disaster relief, environmental monitoring, and intelligent cyber-physical health care systems and devices.

Solid mathematical background and knowledge of programming languages and software tools (e.g., Matlab, NS-3, C#, Unity 3D, HEVC) is required. Above all, an applicant must be self-motivated to learn quickly and work effectively on challenging research problems. For a description of recent activities carried out by Dr. Chakareski, please visit www.jakov.org.

Application process: Please send your CV in attachment to jacobcha@njit.edu and specify in the subject line “X opening application”, where “X” could be {PhD, postdoc, internship, or developer}. Outline your background and research interests in the e-mail. Include a one-page research statement describing your qualifications and how you can contribute to our investigations (summarized on the web site referenced above). Include 3-4 references (names and contact details) and any publications you may have authored.

Please note that NJIT requires certain levels of GRE and IELTS/TOEFL scores for admission of international graduate student applicants (please include these certificates in your email, if you have already taken these tests). An applicant is also advised to include course transcripts and arrange for his/her recommendation letters to be emailed to Prof. Chakareski directly.

Select recent publications:

- IEEE TMM 2024: Live 360° video streaming to heterogeneous clients in 5G networks
- ACM Sigmetrics 2024: BONES: Near-Optimal Neural-Enhanced Video Streaming
- IEEE ISM 2023: Interactive Scene Graph Analysis for Future Intelligent Teleconferencing Systems
- IEEE ISM 2023: Aerial 360-Degree Video Delivery for Immersive First Person View UAV Navigation
- IEEE PIMRC 2023: Evaluation of 5G Delay-Sensitive Single-Carrier Multi-User Downlink Scheduling
- ACM MMSys 2023: FBDT: Forward and Backward Data Transmission Across Multiple RATs for High Quality Mobile 360-Degree Video VR Streaming
- ACM TOMCCAP 2023: Millimeter wave and free-space-optics for future dual-connectivity 6DOF mobile multi-user VR streaming
- IEEE TIP 2023: mmWave networking & edge computing for scalable 360° video multi-user virtual reality
- IEEE SPM 2022: Towards enabling next generation societal virtual reality applications for virtual human teleportation (feature article)
- IEEE IoT Journal 2022: Stochastic computing and hardware acceleration for post-decision state reinforcement learning in IoT systems
- IEEE TVT 2022: UAV-assisted edge computing and streaming for wireless virtual reality: Analysis, algorithm design, and performance guarantees
- PIMRC 2020: Deep Reinforcement Learning for Delay-Sensitive LTE Downlink Scheduling
- IEEE TSP 2020: Accelerated structure-aware reinforcement learning for delay-sensitive energy harvesting wireless sensors
- MMSP 2020: RF-FSO Dual-Path UAV Network for High Fidelity Multi-Viewpoint 360° Video Streaming
- IEEE TCOM 2020: Delay-sensitive energy-harvesting wireless sensors: Optimal scheduling, structural properties, and approximation analysis
- IEEE TMM 2020: Collaborative content placement among wireless edge caching stations with TTL cache
- IEEE TGCN 2019: An energy efficient framework for UAV-assisted millimeter wave 5G HetNets

About: The New Jersey Institute of Technology (www.njit.edu) is a major comprehensive student-centered research university founded in 1881. NJIT is a leading public polytechnic university, and is consistently highly ranked nationally. It is located in the vibrant University Heights area of the rejuvenating and resurging downtown Newark. The close proximity to NYC and the strong tech industry presence in the area provide ample opportunities for further professional and personal development, making studying at NJIT very appealing.

