Rameez Wajid

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Profile

Computer science and engineering educator with more than a decade of teaching experience across three institutions and multiple countries, from large-enrollment introductory programming to upper-division control systems and machine learning. I have taught as a lecturer of avionics engineering, as a graduate teaching assistant in computer science, and as a mentor for diverse student cohorts, including first-generation and international students. My teaching emphasizes:

- active learning and problem-based instruction in algorithms, programming, and controls;
- lab-centric and project-based courses that connect theory to hardware and software;
- inclusive practices, structured mentoring, and outcome-based assessment.

Education

University of Colorado Boulder — Boulder, CO
Ph.D. in Computer Science — *Expected 2026*
M.S. in Computer Science — *2023*
Research: Safety Verification for Cyber-Physical Systems
Advisor: Prof. Sriram Sankaranarayanan

Air University (AU) — Islamabad, Pakistan
M.S. in Control Systems — *2014*
Thesis: Automatic Prediction of Perceptual Image Quality (in collaboration with NTNU)
Advisors: Prof. Atif Mansoor (AU), Prof. Marius Pedersen (NTNU)
GPA: 3.70 / 4.00

National University of Sciences and Technology (NUST) — Islamabad, Pakistan
B.E. in Avionics Engineering (Graduation with distinction) — *2007*
Project: Development of Software for Safe Operation of Co-located Radars
GPA: 3.61 / 4.00, Rank: 2 / 40

Academic Appointments

University of Colorado Boulder — Boulder, CO
Graduate Research / Teaching Assistant, Department of Computer Science — *2020–present*

- Teaching assistant for:
  - CSEN 3104 – Algorithms (S'22, F'22, S'23, Su'23, S'24)
  - CSEN 4622 – Machine Learning (F'23)
- Led recitations and problem-solving sessions, held regular office hours, and mentored students on algorithmic thinking, proof-based reasoning, and practical ML workflows.
- Collaborated on aligning assessments with course learning objectives and refining grading rubrics

for fairness and consistency.

National University of Sciences and Technology (NUST) Islamabad, Pakistan
Lecturer, Department of Avionics Engineering *2014–2017*

- Designed and delivered lectures, labs, assignments, and exams for core courses in avionics and electrical engineering.
- Participated in curriculum design and outcome-based education (OBE) efforts in preparation for accreditation and continuous program improvement.

Oregon State University Corvallis, OR
Graduate Research Assistant (with teaching responsibilities) *2018–2019*

- Supported instruction for:
  - CS 562 – Software Project Management
  - CS 372 – Introduction to Computer Networks (eCampus)
- Provided feedback on student projects, facilitated online discussion forums, and graded written and programming assignments.

Teaching Experience

University of Colorado Boulder – Teaching Assistant (Computer Science)

CSEN 3104: Algorithms *S'22, F'22, S'23, Su'23, S'24*

- Led weekly recitations focusing on problem-solving strategies for sorting, graph algorithms, dynamic programming, and complexity analysis.
- Developed supplementary problem sets and solution walkthroughs to support varied student backgrounds.
- Held regular office hours, providing individualized support on proofs, asymptotic analysis, and exam preparation.

CSEN 4622: Machine Learning *F'23*

- Supported a project-based course that introduced supervised and unsupervised learning, with implementation in Python.
- Guided student teams on scoping final projects, understanding model evaluation, and interpreting results.
- Helped design and grade assignments involving regression, classification, and basic deep learning.

National University of Sciences and Technology (NUST) – Lecturer

Department of Avionics Engineering *2014–2017*

- **Modern Control Systems**: state-space methods, stability analysis, feedback design. Included lab exercises using inverted pendulum and cart-pole equipment, as well as aircraft models in MATLAB/Simulink.
- **Intro to Programming**: redesigned the course from Fortran to Python, introduced open-ended programming projects and emphasized algorithmic thinking.

- **Digital Logic and Computer Design Fundamentals**: Boolean algebra, combinational and sequential logic, and introductory hardware design.
- **Computer-Aided Instrumentation**: sensor interfacing, signal conditioning, and data acquisition, with LabVIEW and MATLAB-based labs.
- **DC Circuit Analysis**: introductory circuits with hands-on lab experiments.

Oregon State University – Graduate TA Support

CS 562: Software Project Management *2018–2019*

- Assisted with project-based learning on software lifecycle, estimation, risk management, and teamwork.
- Evaluated project documentation and presentations; provided formative feedback on communication and collaboration skills.

CS 372: Introduction to Computer Networks (eCampus) *2018–2019*

- Supported a fully online course by moderating discussion forums and answering questions on network protocols, congestion control, and sockets programming.
- Graded assignments and exams, ensuring consistency and timely feedback.

Teaching Awards & Recognition

- Outstanding Teaching Assistant Award, University of Colorado Boulder 2024
- Best Mentor Award, University of Colorado Boulder 2022
- Best Faculty Award, NUST 2016

Mentoring & Student Support

- Mentored undergraduate and graduate students in algorithms and machine learning courses, with emphasis on helping students design projects connecting theory to applications.
- Provided individualized guidance to students from diverse backgrounds, including international students and students transitioning from other disciplines.
- Received the Best Mentor Award (2022) in recognition of sustained student support and mentoring contributions.

Service to Students & Department

- Core Volunteer, CS PhD Open House, University of Colorado Boulder 2024, 2025
- Volunteer, CS PhD Orientation, University of Colorado Boulder 2024
- Volunteer, POPL (Symposium on Principles of Programming Languages), Denver 2025
- Reviewer: 14th IBCAST Conference, Islamabad, Pakistan 2016
- Reviewer: 61st IEEE Conference on Decision and Control (CDC), Cancun, Mexico 2022
- Reviewer: European Control Conference (ECC), Bucharest, Romania 2023

Research & Scholarship (Selected)

Journal and Conference Publications

- R. Wajid and S. Sankaranarayanan. *Successive Barrier Functions for Nonlinear Systems.* Hybrid Systems: Computation and Control (HSCC), 2025.
- R. Wajid, A. U. Awan, and M. Zamani. *Formal Synthesis of Safety Controllers for Unknown Stochastic Control Systems using Gaussian Process Learning.* Learning for Dynamics and Control (L4DC), PMLR, 2022, pp. 624–636.
- R. Wajid and A. Bin Mansoor. *Classifier Performance Evaluation for Offline Signature Verification using Local Binary Patterns.* 4th European Workshop on Visual Information Processing (EUVIP), IEEE, Paris, France, 2013.
- R. Wajid, A. Bin Mansoor, and M. Pedersen. *A Study of Human Perception Similarity for Image Quality Assessment.* Colour and Visual Computing Symposium (CVCS), IEEE, Gjovik, Norway, 2013.
- R. Wajid, A. Bin Mansoor, and M. Pedersen. *A Human Perception-Based Performance Evaluation of Image Quality Metrics.* International Symposium on Visual Computing (ISVC), Springer, Las Vegas, USA, 2014.

Relevant Graduate Coursework

Advanced Robotics; Social Robotics; Deep Learning; Machine Learning; Artificial Intelligence; Nonlinear Systems; Flight Dynamics and Control; Linear Multivariable Feedback Control; Digital Signal Processing; Random Processes; Adaptive Filtering; Optimal Control; Autonomous Systems; Linear Programming; Theory of Computation; Computer-Aided Verification.

Technical Skills

Programming & Tools: C++, Python, Julia, C#, MATLAB, PyTorch, R, LabVIEW, ROS

Visualization & UI: Presagis Creator, TerraVista, VAPS XT, Unity3D

Simulation & Robotics: X-Plane, FlightGear, OMPL, OpenSim