OWAIS KHAN

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PROFESSIONAL SUMMARY

Dedicated and results-driven professional with a **Ph.D. in Electrical Engineering (Control Systems)**, an *Associate Fellow* of the **UK Professional Standards Framework (AFHEA)**, and an *IEEE Senior Member*. Brings 7+ years of combined teaching, laboratory instruction, and student mentorship across multiple institutions, dedicated to active learning, practice oriented education, and student success. Complemented by 3+ years of postdoctoral research experience at Arizona State University (ASU) and Bowling Green State University (BGSU) designing, developing, and implementing adaptive control algorithms for complex dynamical systems in NIH R01-funded interdisciplinary projects and industry-collaborative projects. Possesses a strong foundation in dynamic modeling, estimation, optimization, and classical control (PID, root-locus methods), and modern control (MPC, LQR/LQI) techniques. Demonstrated research impact through 27+ peer-reviewed journal and conference publications. **A permanent US resident (Green Card Holder) and does not need employer sponsorship.**

KEY HONORS AND PROFESSIONAL DISTINCTIONS

- *2026 Young Investigator Research Forum Award*, American Academy of Sleep Medicine Foundation.
- Associate Fellow, UK Professional Standards Framework for Teaching and Learning Support in Higher Education.
- IEEE Senior Member, IEEE Control Systems Society (CSS)
- Member of the American Academy of Sleep Medicine Foundation.
- Member of the International Association of Engineers, Hong Kong.
- Ph.D. Doctoral Endowment Fellowship, IT & Telecom Endowment Fund, Pakistan

ACADEMIC APPOINTMENTS

Postdoctoral Research Associate Mar. 1, 2026 – Present
Bowling Green State University, Bowling Green, OH, USA

- Collaborating with the Northwest Ohio Innovation Consortium and industry partners to develop physics-informed, data-driven models and observer-based, multi-objective constrained model predictive control frameworks for industrial glass-melting processes, with the goals of improving process stability, regulating the charging-to-pull-rate balance, reducing energy consumption, and supporting flexible production schedules.
- Mentoring graduate students, supporting project milestones, and contributing to peer-reviewed publications and technical reports.

Research Specialist Principal (Consultant) (Remote, Part-Time) Aug. 3, 2026 – Present
Arizona State University, Tempe, AZ, USA

- Providing technical advisory and research support for ongoing NIH-funded projects involving data-driven modeling, control-system design, simulation, and analysis for just-in-time adaptive interventions.

Postdoctoral Research Scholar/Assistant Research Scientist Oct. 30, 2023 – Feb. 20, 2026
Arizona State University, SEMTE, Tempe, AZ, USA

- Collaborated with multidisciplinary teams on digital health projects, including physical activity intervention (*YourMove*), prenatal weight gain (*Healthy Mom Zone 2.0*), and CPAP adherence (*SleepWell24*).
- Designed and implemented real-time adaptive control algorithms using a three-degree-of-freedom Kalman filter-based Hybrid Model Predictive Control *(3DoF-KF HMPC)* framework for complex dynamical systems.
- Led full-cycle development of real-time algorithms, resulting in improved adherence and outcome metrics for *YourMove* (198+ participants) and *Healthy Mom Zone 2.0* (100+ participants).
- Led theoretical development, software implementation, experimental validation, and manuscript preparation.
- Mentored graduate students, supported project milestones, and contributed to studies funded by the U.S. National Institutes of Health (NIH) and the American Academy of Sleep Medicine Foundation.

Postdoctoral Research Scholar Oct. 18, 2021 – Oct. 16, 2022
Arizona State University, SEMTE, Tempe, AZ, USA

- Collaborated with a cross-functional team on *YourMove* intervention (198+ participants), applying computational modeling and system identification approaches to develop control-oriented models.
- Designed and implemented a *3DoF-KF HMPC* algorithm for highly dynamic MIMO systems, including supply chain and behavioral interventions *(JustWalk, YourMove)* applications.
- Conducted real-time closed-loop testing with MATLAB/Simulink, Python, and Gurobi/CPLEX solvers.
- Performed stability and robustness analysis and achieved 100% successful adaptive intervention delivery.

Lecturer Sep. 8, 2018 – Mar. 8, 2021
Grafton College of Engineering & Sciences, DEE, Islamabad, Pakistan

- Taught undergraduate courses including Control Systems Design, Electric Network Analysis, Circuit Analysis, Digital Logic Design, and Differential Equations.
- Conducted laboratory sessions and maintained course files, laboratory manuals, assessment records, and teaching documentation.
- Assessed student performance using outcome-based education methods, including assignments, laboratory reports, tests, viva exams, and final evaluations.
- Supervised final-year undergraduate design projects and contributed to module development.
- Integrated hands-on activities and simulations to improve student engagement and conceptual understanding.

Lab Instructor Sep. 18, 2017 – Jun. 15, 2018
Pakistan Institute of Engineering and Applied Sciences, Islamabad, Pakistan

- Conducted undergraduate electrical engineering laboratory sessions and maintained lab documentation.
- Conducted laboratory tests and viva examinations and maintained student attendance and assessment records.
- Assessed student performance using outcome-based education metrics.

Doctoral Researcher Sep. 27, 2016 – Dec. 29, 2020
Pakistan Institute of Engineering and Applied Sciences, Islamabad, Pakistan

- Developed an observer-based robust MPC algorithm for non-uniformly sampled systems, improving stability, performance, and computation time by 60%.
- Developed a fault-tolerant robust MPC scheme for actuator-fault-prone systems, achieving approximately 70% fault compensation under time delays while ensuring stability and performance.

EDUCATION

Ph.D. in Electrical Engineering (Control Systems) 2016 – 2020
Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad, Pakistan
Dissertation: *Robust model predictive control and fault-tolerance of uncertain dynamical systems.*

M.S. in Electrical Engineering (Control Systems) 2014 – 2016
COMSATS University Islamabad, Islamabad, Pakistan
Thesis: *Dynamic Modeling and Robust Control Design for Single-Link Flexible Joint Robots.*

B.Sc. in Electronics Engineering 2007 – 2011
University of Engineering and Technology, Peshawar, Pakistan

PROJECTS

SleepWell24: App-Based Optimization of Long-Term CPAP Adherence and Quality of Life
Control Systems Engineer
Funding Agency: *AASM Foundation; Grant: AASMF # **285-SR-22**; ClinicalTrials.gov ID: **NCT06381115***

- Developed personalized control-oriented dynamic models using system identification and implemented a *3DoF-KF HMPC* framework to support personalized interventions aimed at improving CPAP adherence among individuals with obstructive sleep apnea.
- Integrated symptom-aware goal setting into adaptive *mHealth* interventions to reduce reported side effects and improve patient engagement and therapy compliance.

Healthy Mom Zone (HMZ) 2.0: Efficacy of a Novel Digital Platform to Scale-Up a Personalized Prenatal Weight Gain Intervention Using Control Systems Methodology
Lead Control Systems Engineer
Collaborators: *Penn State University, Arizona State University*
Funding Agency: *U.S. National Institutes of Health; Grant:* ***R01DK134863****; ClinicalTrials.gov ID:* ***NCT05807594***

- Engineered control-oriented models for a prenatal intervention using a genetic algorithm-based grey-box approach, enabling accurate GWG prediction despite 10% missing data.
- Developed and implemented a *3DoF-KF HMPC* framework, accomplishing a 21% reduction in GWG during early trials; delivered customized dosage adjustments to 30+ participants across 5 adaptive intervention stages.
- Validated controller performance against Institute of Medicine targets, attaining 88-98% device compliance (Fitbit, Aria scale) through a 28-day pilot study and $>$50 simulation scenarios.
- Directed full-cycle development from data collection to real-time closed-loop execution, enabling automated dosage adjustments under clinical variability.

The YourMove Study: Optimizing Individualized and Adaptive mHealth Interventions via Control Systems Engineering Methods
Lead Control Systems Engineer
Collaborators: *UC San Diego, Arizona State University*
Funding Agency: *National Cancer Institute, NIH; Grant:* ***R01CA244777****; ClinicalTrials.gov ID:* ***NCT05598996***

- Integrated control theory in behavioral medicine to execute a personalized *mHealth* intervention for sedentary individuals, attaining $>$1,000 steps/day increase during closed-loop stage compared to baseline.
- Followed the Control Optimization Trial framework to develop customized control strategies based on individualized models, enabling participants to achieve personalized daily step goals.
- Implemented a *3DoF-KF HMPC* algorithm with computational dynamic models, achieving $>$85% goal attainment for individualized activity targets, and enabling real-time personalization for $198+$ participants.
- Demonstrated algorithmic robustness, achieving a stable closed-loop response within $\pm$10% of the target step count, without instability despite model mismatch.

PEER-REVIEWED JOURNAL PUBLICATIONS (ACCEPTED/IN-PRESS)

1. P. Otálora, et al., "Enhancing pH Control in Microalgae Raceway Photobioreactors Using 3DoF-KF Model-on-Demand Model Predictive Control," *Control Engineering Practice*, vol. 168, Mar. 2026. doi: 10.1016/j.conengprac.2025.106742.
2. J. Whitney, V. A. Suhy, A. M. Pauley, D. Shao, **O. Khan**, A. M. Moore, S.-M. Chow, D. E. Rivera, and D. S. Downs, "Game, Set, and Match: A Scoping Review of Matching Characteristics for Control and Intervention Groups in Adaptive Behavioral Interventions for Physical Activity or Healthy Eating Designs for Populations with Overweight and Obesity," *Behavioral Medicine*, 2026, pp. 1-16. doi: 10.1080/08964289.2026.2641440. **PMID**: 41877451; **PMCID**: PMC13123276.
3. **O. Khan**, G. Mustafa, et al., "Robust Model Predictive Control of Sampled-Data Lipschitz Nonlinear Systems: Application to Flexible Joint Robots," *European Journal of Control*, vol. 81, January 2025. doi: 10.1016/j.ejcon.2024.101147.
4. **O. Khan**, et al., "3DoF-KF HMPC: A Kalman Filter-Based Hybrid Model Predictive Control Algorithm for Mixed Logical Dynamical Systems," *Control Engineering Practice*, 154, January 2025. doi: 10.1016/j.conengprac.2024.106171. **PMID**: 39639870; **PMCID**: PMC11616245.
5. S. Banerjee, **O. Khan**, et al., "Data-Driven Control of Nonlinear Process Systems Using a Three-Degree-of-Freedom Model-on-Demand Model Predictive Control Framework," *Industrial & Engineering Chemistry Research*, 64(17), 2025, pp. 8847–8864. doi: 10.1021/acs.iecr.4c04583. **PMID**: 41140875; **PMCID**: PMC12551675.
6. D. S. Downs, et al., "Healthy Mom Zone Adaptive Intervention with Novel Control System and Digital Platform: Study Design and Protocol for a Randomized Controlled Trial to Manage Gestational Weight Gain in Pregnant Women with Overweight," *JMIR Research Protocols*, 14, 2025. doi: 10.2196/66637. **PMCID**: 11950706.

7. M. Kim, et al., "Optimizing and Testing an Individualized and Adaptive Physical Activity Digital Health Intervention: Protocol of Control Optimization Trial Embedded Within a Randomized Controlled Trial," *JMIR Research Protocols*, 14, 2025. doi: 10.2196/70599. **PMID**: 40815836; **PMCID**: PMC12397713.
8. M. El. Mistiri, **O. Khan**, et al., "Data-Driven Mobile Health: System Identification and Hybrid Model Predictive Control to Deliver Personalized Physical Activity Interventions," *IEEE Open Journal of Control Systems*, 4, 2025, pp. 83-102. doi: 10.1109/OJCSYS.2025.3538263. **PMID**: 40626117; **PMCID**: PMC12230519.
9. S. Shafique, et al., "Design of Event-Triggered Asynchronous H_∞ Filter for Switched Systems Using the Sampled-Data Approach," *IEEE Access*, 11, 2023, pp. 34032–34043. doi: 10.1109/ACCESS.2023.3263554 .
10. H. Sana, G. Mustafa, **O. Khan**, et al., "Analysis and Design of Secure Sampled-Data Control Subject to Denial-of-Service Attacks," *IEEE Access*, 11, 2023, pp. 48454–48462. doi: 10.1109/ACCESS.2023.3277218
11. M. A. Shoaib, et al., "A Framework for Observer-Based Robust Fault Detection in Nonlinear Systems with Application to Synchronous Generators in Power Systems," *IEEE Transactions on Power Systems*, 37(2), 2022. doi: 10.1109/TPWRS.2021.3106913.
12. M. A. Shoaib, et al., "Robust Fault Detection Scheme for Synchronous Generator Having Nonlinear Uncertain Measurements Along with Perturbation," *IEEE Access*, 10, 2022. doi: 10.1109/ACCESS.2022.3228274.
13. A. ur Rehman, et al., "A Disturbance Observer-Based Sliding Mode Control for Variable Speed Wind Turbine," *IETE Journal of Research*, 68(3), 2022, pp. 1823-1830. doi: 10.1080/03772063.2019.1676661.
14. M. Hussain, F. B. Muslim, **O. Khan**, N. Us Saqib, "Robust Anti-Windup Control Strategy for Uncertain Nonlinear Systems with Time Delays," *Arabian Journal for Science and Engineering*, 47(3), 2022.
15. **O. Khan**, G. Mustafa, et al., "Fault-Tolerant Robust Model Predictive Control of Uncertain Time-Delay Systems Subject to Disturbances," *IEEE Transactions on Industrial Electronics*, 68(11), 2021. doi: 10.1109/TIE.2020.3029469.
16. **O. Khan**, G. Mustafa, A. Q. Khan, M. Abid, "Robust Observer-Based Model Predictive Control of Non-Uniformly Sampled Systems," *ISA Transactions*, 98, 2020, pp. 37-46. doi: 10.1016/j.isatra.2019.08.050.
17. **O. Khan**, et al., "On the Derivation of Novel Model and Sophisticated Control of Flexible Joint Manipulator," *Revue Roumaine des Sciences Techniques–Serie Electrotechnique et Energetique*, 62(1), 2017, pp. 103-108

PEER-REVIEWED CONFERENCE PROCEEDINGS (ACCEPTED/IN-PRESS)

1. **O. Khan**, D. E. Rivera, et al., "Optimizing CPAP Adherence and Quality of Life in Obstructive Sleep Apnea Patients Using 3DoF-KF Hybrid Model Predictive Control," in *IEEE Conference on Control Technology and Applications*, San Diego, CA, August 25–27, 2025, pp. 157–162. doi: 10.1109/CCTA53793.2025.11151523.
2. **O. Khan**, et al., "An Optimized Behavioral Intervention for Managing Gestational Weight Gain Using Semi-Physical Modeling and Hybrid Model Predictive Control," in *American Control Conference*, Denver, CO, USA, 2025. doi: 10.23919/ACC63710.2025.11107916. **PMID**: 41306560; **PMCID**: PMC12646135.
3. M. El. Mistiri, J. Park, **O. Khan**, S. Banerjee, E. Hekler, and D. E. Rivera, "YourMove: A System Identification and Hybrid Model Predictive Control Personalized mHealth Intervention for Physical Activity," in *American Control Conference*, Denver, CO, USA, 2025, pp. 3974–3980. doi: 10.23919/ACC63710.2025.11108009.
4. S. Banerjee, M. El. Mistiri, **O. Khan**, et al., "A Data-Driven Hybrid Model Predictive Control Framework for Managing Epidemics Using 3DoF-KF HMPC," in *American Control Conference*, Denver, CO, USA, 2025, pp. 2023–2028. doi: 10.23919/ACC63710.2025.11108029.
5. S. Banerjee, **O. Khan**, et al., "Data-Driven Control of Highly Interactive Systems Using 3-DoF Model-on-Demand MPC: Application to MIMO CSTR," *IFAC-PapersOnLine*, 58(15), 2024, doi: 10.1016/j.ifacol.2024.08.565.
6. S. Banerjee, P. Otálora, M. El. Mistiri, **O. Khan**, et al., "Control-Relevant Input Signal Design for Integrating Processes: Application to a Microalgae Raceway Reactor," *IFAC-PapersOnLine*, 58(15), 2024, pp. 360–365. doi: 10.1016/j.ifacol.2024.08.555.
7. M. El. Mistiri, **O. Khan**, et al., "System Identification and Hybrid Model Predictive Control in Personalized mHealth Interventions for Physical Activity," in *American Control Conference*, San Diego, CA, USA, 2023, pp. 2240–2245. doi: 10.23919/ACC55779.2023.10156652. **PMID**: 37426035; **PMCID**: PMC10327579.

8. **O. Khan**, et al., "A Kalman Filter-Based Hybrid Model Predictive Control Algorithm for Mixed Logical Dynamical Systems: Application to Optimized Interventions for Physical Activity," in *61st IEEE Conference on Decision and Control*, Cancun, Mexico, 2022. doi: 10.1109/CDC51059.2022.9992932. **PMCID**: PMC10018791.
9. E. Ahmad, A. ur Rehman, **O. Khan**, et al., "Backstepping Control Design for Two-Wheeled Self-Balancing Robot," in *1st International Conference on Power, Energy and Smart Grid*, Mirpur, Pakistan, 2018. doi: 10.1109/ICPESG.2018.8384494.
10. A. ur Rehman, **O. Khan**, et al., "Nonlinear Robust Control of a Variable-Speed Wind Turbine," in *2018 International Conference on Engineering and Emerging Technologies*, Lahore, Pakistan, February 22–23, 2018, pp. 1–6. doi: 10.1109/ICEET1.2018.8338647.
11. **O. Khan**, et al., "Beyond Linear Control Approaches–Sliding Mode Control of Flexible Robotic Manipulator," in *International Conference on Frontiers of Information Technology*, Islamabad, Pakistan, December 19–21, 2016, pp. 1–6. doi: 10.1109/FIT.2016.009.

CONFERENCE ABSTRACTS AND POSTERS

1. T. B. Ibrahim, **O. Khan**, and M. I. K. Abouheaf, "Semiphysical Modeling and Sensorless Control of Industrial Glass Melting Processes," poster presented at the *87th Glass Problems Conference and Symposium*, Toledo, OH, September 14–17, 2026. **Student Poster Award**.
2. M. E. Petrov, **O. Khan**, et al., "0602 Personalized CPAP Adherence with SleepWell24: Early Outcomes of an Adaptive Smartphone Application Using Control Systems Engineering Approaches," *SLEEP*, vol. 49, suppl. 1, pp. A267–A268, 2026. **Conference abstract**. doi: 10.1093/sleep/zsag091.0601.
3. D. Symons Downs, A. M. Pauley, **O. Khan**, et al., "Feasibility and Early Outcomes of a Digital Platform for Managing Gestational Weight Gain in Pregnant Women with Overweight or Obesity," **Conference Abstract, SBM 46th Annual Meeting & Scientific Sessions**, San Francisco, CA, USA, March 26–29, 2025
4. J. A. Whitney, V. A. Suhy, A. M. Pauley, D. E. Rivera, C. M. Lagoa, D. Shao, S.-M. Chow, Y. W. Cho, **O. Khan**, et al., "Identifying Characteristics to Match Control Groups to Treatment Groups in Adaptive Interventions," **Co-authored Poster, SBM 46th Annual Meeting**, San Francisco, CA, USA, March 26–29, 2025
5. V. A. Suhy, A. M. Pauley, J. A. Whitney, D. E. Rivera, **O. Khan**, et al., "Back-Calculation of Energy Intake: Considerations for Using Total kcal vs. Active kcal and Estimated Resting Metabolic Rate in Pregnant Women," **Co-authored Poster, SBM 46th Annual Meeting**, San Francisco, CA, USA, March 26–29, 2025
6. V. A. Suhy, A. M. Pauley, J. A. Whitney, D. E. Rivera, **O. Khan**, et al., "How Light and Moderate Physical Activity Are Classified Has Implications for Whether Pregnant Women Are Meeting or Not Meeting Activity Guidelines," **Co-authored Poster, SBM 46th Annual Meeting**, San Francisco, CA, USA, 2025.
7. S. Banerjee, **O. Khan**, M. El Mistiri, and D. E. Rivera, "Data-Driven Nonlinear Control of a CSTR Using Three-Degree-of-Freedom Model-on-Demand Model Predictive Control," **Conference Abstract and Poster, American Control Conference**, San Diego, CA, USA, 2023
8. M. El Mistiri, D. E. Rivera, **O. Khan**, et al., "An Integrated System Identification and Hybrid Model Predictive Control Strategy for Optimized Interventions for Physical Activity," **Conference Abstract, AIChE Annual Meeting**, Phoenix, AZ, USA, November 16, 2022

MANUSCRIPTS UNDER REVIEW AND TO BE SUBMITTED

1. **O. Khan**, et al., "Neural ODE-Based Dynamic Modeling and Observer-Based Control of Industrial Glass Melting Processes," 2026 **(Under review; *Chemical Engineering Research and Design)***
2. **O. Khan** and M. Abouheaf, "Dynamic Modeling and Preview-Enabled Three-Degree-of-Freedom Kalman Filter-Based Model Predictive Control of Industrial Glass Melting Processes," 2027 **(Under review; *ACC)***
3. W. Alam, **O. Khan**, N. Ashraf, "Estimation-Driven Model Predictive Control Architecture for Active Suspension Systems Under Road Disturbances," 2026 **(Revision Submitted; Asian Journal of Control)**
4. **O. Khan**, et al., "Data-Driven Semiphysical Modeling and Hybrid Model Predictive Control for Personalized Behavioral Interventions in Gestational Weight Management," 2026 **(Under review; *IEEE TCST)***
5. S. Banerjee, et al., "Data-Driven System Identification and 3DoF-KF Model Predictive Control for Integrating Processes: Application to a Microalgae Raceway Reactor," 2026 **(To be Submitted)**

6. S. Banerjee, **O. Khan**, et al., "A Data-Driven Nonlinear Predictive Control Framework Using Direct Weight Optimization-Based 3DoF-KF MPC," 2026 **(To be Submitted)**

PROFESSIONAL SERVICES

Journal Reviewer: Served as a peer reviewer for leading international journals, including *Control Engineering Practice*, *Automatica*, *IFAC Journal of Systems and Control*, *ISA Transactions*, *IEEE Transactions on Industrial Electronics*, *IEEE Transactions on Industrial Informatics*, *Ocean Engineering*, *Journal of the Franklin Institute*, and *IEEE Transactions on Industrial Cyber-Physical Systems*.

STUDENT MENTORING & CO-ADVISING

- **Toheeb Ibrahim**, PhD Student, Bowling Green State University — Spring 2026–Present
  Supervised research on Physics-Informed Neural Network-based dynamic modeling and control of industrial glass melting processes. His poster, "*Semiphysical Modeling and Sensorless Control of Industrial Glass Melting Processes*," received a Student Poster Award at the 87th Glass Problems Conference, Toledo, Ohio, 2026.
- **Sarasij Banerjee**, PhD Student, Arizona State University — 2021–2022
  Mentored algorithm design for 3DoF-KF MPC; co-authored 6 papers (4 published, 2 in preparation).
- **Muhammad Asim Shoaib**, PhD Student, PIEAS — 2017–2020
  Co-mentored robust fault detection for power generators; co-authored papers in *IEEE Transactions on Power Systems* and *IEEE Access*.
- **Undergraduate Capstone Students**, Grafton College — 2018 – 2021
  Supervised final year design projects of the students (Syed Haider Hussain Shah, Hasnain Ali, and Farrukh Ahmad) on autonomous fire extinguishing quadrotors and embedded control systems.

CERTIFICATIONS AND TRAINING

- **GCP – Social and Behavioral Research Best Practices for Clinical Research** — Nov. 2, 2023
  CITI Program (Training)
- **RCR Workshop – Data Management** — Nov. 9, 2021
  Arizona State University, AZ, USA (Training)
- **RCR – Social and Behavioral Responsible Conduct of Research** — Oct. 28, 2021
  CITI Program (Training)
- **IRB – Social & Behavioral Research (Group 2)** — Oct. 28, 2021
  CITI Program (Training)
- **Model Predictive Control** — Jan. 30 – Feb. 1, 2020
  SEECS-NUST, Islamabad, Pakistan (Workshop)
- **Nonlinear Control Systems by Prof. Hassan Khalil** — Mar. 6–8, 2017
  SEECS-NUST, Islamabad, Pakistan (Workshop)

TECHNICAL SKILLS AND INTERESTS

Estimation & Control	Kalman Filter, Luenberger Observer, Model Predictive Control, Robust and Adaptive Control, Classical/Modern Control, Data-Driven Control, Fault Diagnosis and Tolerance.
Real-time System Testing and Optimization	Model-in-the-loop testing, Linear and Nonlinear Programming, Quadratic and Mixed-Integer Programming, Semidefinite Programming.
Modeling and Simulation	Dynamic Modeling, System Identification, Linear/Nonlinear/Hybrid Systems
Languages and Tools	MATLAB/Simulink, Python (NumPy, SciPy, Pandas, Matplotlib), GitHub.
Optimization Solvers	CPLEX, Gurobi, CVX, SeDuMi, SDPT3.
Additional Skills	Research project coordination, interdisciplinary collaboration, technical writing, student mentoring, leadership, interpersonal skills, and grant-support activities