Chandan Sheikder

14 # 218, Building 14, Zhongguancun Campus, BIT, Beijing 100081, China

Research Focus: Bio-Robotics — Animal Navigation — Medical Robots — Calcium Imaging

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Google Scholar ResearchGate

Education

PhD in Mechatronical Engineering (Thesis) *Fall 2025 – Summer 2029*
Beijing Institute of Technology (BIT)

Status: In Progress

MEng in Mechanical Engineering (Thesis) *Fall 2023 – Summer 2025 (1st class)*
Beijing Institute of Technology (BIT) *Beijing, China*

BEng in Mechatronics Engineering *Fall 2019 – Summer 2023*
Hebei University of Technology *Tianjin, China*

- **Final CGPA:** 3.514/4.0 (Rank: 2nd out of 61 students)

Research Experience

- **Graduate Research Assistant** *Sep 2024 – Present*
  Beijing Institute of Technology (BIT), Beijing, China
  - Conducting thesis research on bio-inspired swarm robotics and developing novel navigation frameworks for autonomous systems in complex, GPS-denied environments.
  - Responsibilities include algorithm development, high-fidelity simulation in ROS/Gazebo, system integration, and preparation of manuscripts for publication.

Selected Projects

- **Development of Robot Navigation and Positioning System** *Jan 2025 – Present*
  Affiliation: Beijing Institute of Technology
  - Designing and implementing a robust navigation framework to handle dynamic obstacles, unstructured terrain, and sensor noise for reliable robot operations.
  - Investigating sensor fusion algorithms (IMU, LiDAR, Vision) and developing adaptive navigation strategies in ROS.
  - **Skills:** SLAM, Robot Navigation, Sensor Fusion, Motion Planning, ROS, Gazebo, Python, C++.
- **Smart Wheelchair Walker and Cloud Platform System** *Mar 2025 – Present*
  Affiliation: Beijing Institute of Technology
  - Architecting an integrated assistive technology system combining a smart wheelchair with a cloud-connected platform for real-time monitoring and remote assistance.
  - **Skills:** IoT, Cloud Integration, System Design, Human-Robot Interaction (HRI).
- **Design of a Temperature & Humidity Control System (Graduation Thesis)** *Summer 2023*
  Affiliation: Hebei University of Technology

- Executed a full project lifecycle from design to implementation of a closed-loop environmental control system.
- Programmed an Arduino microcontroller to process sensor data and actuate components for precise regulation.
- **Skills:** Embedded Systems, Arduino IDE, C++, PID Control, Sensor Integration, Prototyping.

Research Publications

[1] Sheikder, C. et al., "Bio-inspired navigation systems for robots," *Nature Reviews Bioengineering*, vol. 2025, no. 2731-6092, pp. 2025, https://doi.org/10.1038/s44222-025-00367-6. (Impact Score: 37.6)

[2] Sheikder, C. et al., "Marine-Inspired Multimodal Sensor Fusion and Neuromorphic Processing for Autonomous Navigation in Unstructured Subaquatic Environments," *sensors*Q1 Journal (Impact Score:3.7)https://doi.org/10.3390/s25216627.

[3] Sheikder, C. et al., "A Hybrid Bio-Inspired Navigation Framework for GPS-Denied Robotics, Trends in Biotechnology"
textitSubmitted to a Q1 Journal(Impact Score:14.9).[Under Review]

[4] Sheikder, C. et al., "Autonomous Space Exploration, Interplanetary Communication Latency, Ethical AI Protocols, Machine Learning in Extreme Environments," *Submitted to a Q1 Journal (Impact Score: 2.611).* [Accepted]

[5] Sheikder, C. et al., "A Novel Adaptive framework interconnects four pillars for Tethered Robots: Integrating Fuzzy Logic, Genetic Algorithms, and Neural Networks for Robust Dynamic Environment Navigation," *Submitted to Robotics and Autonomous Systems (Impact Score: 5.2, Q1).* [Under Review] [Preprint: nature robotics]

[6] Sheikder, C. et al., "Soft Computing Techniques Applied to Adaptive Hybrid Navigation Methods for Tethered Robots in Dynamic Environments," *Submitted to Robotics and Autonomous Systems (IF: 5.2, Q1).* [1st Revision Submitted] [Preprint: Authorea]

[7] Sheikder, C. et al., "Towards the Wearable Cardiorespiratory Sensors for Aerospace Applications," *Journal of Aviation/Aerospace Education & Research*, vol. 34, no. 2, 2025, doi: 10.58940/2329-258X.2009.

[8] Sheikder, C. et al., "Assessing Cognitive Workload in Air Traffic Management using Cardio-Respiratory Sensor: A Performance Evaluation," *Journal of Aeronautics & Aerospace Engineering*, vol. 12, no. 2, pp. 1-11, Feb. 2023, doi: 10.35248/2168-9792.23.12.316. (1st Revision Submitted).

[9] Sheikder, C. et al., "Towards Finding the Impact of Kinetic Information on Short Term Memory based Task," *Journal of Control & Instrumentation*, vol. 14, no. 1, pp. 1–8, May 2023, doi: 10.37591/JOCI.V14I1.6957.

[10] M. M. Haque, Sheikder, C. et al., "Retroactive about Robotics Application with Artificial Intelligence toward the Global Pandemic Scenario," *European Journal of Electrical Engineering and Computer Science*, vol. 7, no. 2, pp. 34-43, Apr. 2023, doi: 10.24018/EJECE.2023.7.2.494.

[11] M. M. Haque, Sheikder, C. et al., "Exploiting the Phenomena of Performance Degradation Distribution for Reliability Evaluation of Aerospace Engines," *Proc. 2022 IEEE International Conference on Advanced Technology Management and Smart Infrastructure (IATMSI)*, 2022, doi: 10.1109/IATMSI56455.2022.10119458. **(Best Paper Award)**.

Patents

- C. Sheikder, et al. **"Bio-inspired Fusion Navigation Framework for Autonomous Robots in GPS-Denied Environments."** Chinese Patent Application (Pending).

Conference Presentation

- "Exploiting the Phenomena of Performance Degradation Distribution for Reliability Evaluation of Aerospace Engines." 2022
  IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI).

Professional Experience

Sales Manager *Nov 2023 – Present*
PT INDUSTRY TIANJIN CO., LTD

Sales Manager *Jul 2023 – Nov 2023*
Fucare Bike

Systems Engineer *Jan 2017 – Oct 2019*
Ring Tech Communications

Grants, Awards, and Honors

- **Best Paper Award**, IEEE MP Section (2022)
- **CSC Scholarship**, Chinese Government Scholarship for Graduate Studies (2024-2026)
- **International Student Assistant Certificate**, Hebei University of Technology (2022)
- **International Student Council Certificate**, Hebei University of Technology (2020)

Certifications

- **Technical & Engineering:**
  Deep Learning with TensorFlow (2021), Python for Data Science (2021), Artificial Intelligence Concepts (2021), Technical Drawing for Design and Drafting (2023), Introduction to Cloud (IBM, 2021), AutoCAD (2021), CNC (2021)
- **Professional & Marketing:** Google Ads Certifications (Measurement, Search, Display, Apps) (2021, 2023); LinkedIn Marketing Solutions & Strategy Certifications (2023); 120-hour Professional TEFL (2021)

Teaching and Service Activities

- **Teaching Assistant**, School of International Education, Hebei University of Technology 2020 – 2021
- **President**, Student Activity Department , Frontline Volunteer, Fight the COVID-19, Bangladesh Scouts, IFERP (Institute For Engineering Research and Publication) 2023 – Present,Science Club (2020-2021) & Sports Club (2019-2020)

Languages

Bengali: Native, **English:** Fluent, **Chinese:** Intermediate (HSK3 Certified), **Hindi:** Intermediate