Chandan Sheikder

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

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

+86-18222390506 chandan@bit.edu.cn Linkedin

Google Scholar ResearchGate

Education

MEng in Mechanical Engineering (Thesis) *Fall 2023 – Summer 2026 (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., "Neuromorphic Navigation for Autonomous Robots," *Device (Cell Press).* (Q1 Journal, Impact Score: 6.9).

[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 "Neuromorphic Framework for Bio-Inspired Navigation in Autonomous Robots"*Submitted to a Q1 Journal (Cell Reports Physical ScienceImpact Score: 7.2).* [1st Revision Submitted]

[6] Sheikder, C. et al., "Bio-inspired and Soft Robotics for Autonomous Wind Energy Operations: A Comprehensive Review on Inspection, Repair, and Resilient Design," *Submitted to Renewable and Sustainable Energy Reviews (Impact Score: 20.2, Q1).* [1st Revision Submitted]

[7] 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]

[8] 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.

[9] 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).

[10] 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.

[11] 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.

[12] 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).

Academic Service & Editorial Roles

- **Guest Editor**, *Sensors* Journal (MDPI) Present
- **Teaching Assistant**, School of International Education, Hebei University of Technology 2020 – 2021
- **President**, Student Activity Department, Frontline Volunteer (COVID-19) 2023 – Present
- **Member**, IFERP (Institute For Engineering Research and Publication)
- **Member**, Science Club (2020-2021) & Sports Club (2019-2020)

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)

Languages

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