NeuroFlight Lab

Official Organization Documentation Version 1.0 | November 01, 2025 Prepared for Initial Public Reference Website: www.neuroflightlab.org

---

1. Mission Statement

"To advance interdisciplinary research and innovation at the intersection of AI, robotics, biotechnology, and software systems — empowering intelligent, sustainable, and human-centered solutions through collaboration, education, and real-world impact."

---

2. Vision

To become a globally recognized hub for **AI-driven interdisciplinary innovation**, bridging academia, industry, and society to solve complex challenges in health, environment, automation, and digital transformation.

---

3. Core Values

Value	Description
Innovation	Pushing boundaries with bold, creative, and practical solutions.
Collaboration	Cross-disciplinary teamwork across departments, universities, and industries.
Integrity	Transparent, ethical, and responsible research and development.
Impact	Prioritizing real-world applications that benefit humanity and the planet.
Excellence	Upholding the highest standards in research, code, and education.

---

4. Organizational Structure

Leadership & Governance

- **Principal Investigator**: Prof. Dr. Dip Nandi
- **Scientific Advisor (Biotech)**: Prof. Dr. Md. Imtiaz Uddin
- **Director & Lead Researcher**: S.M. Tawhid

Departments

Department	Lead	Focus Areas
Biomechatronics & Robotics	Dr. Debajyoti Karmaker	Autonomous systems, bio-inspired robots, human-robot interaction
Machine Learning & Computer Vision		Deep learning, visual AI, predictive modeling
Biotechnology & Plant Breeding	Prof. Dr. Md. Imtiaz Uddin	Genetic engineering, climate-resilient crops, bioinformatics
Software Development		Full-stack systems, AI platforms, open-source tools

---

5. Research & Innovation Pillars

Pillar	Objectives	Example Projects (Planned/Ongoing)
AI-Powered Robotics	Develop adaptive, safe, and intelligent robotic systems	NeuroFlight Drone Swarm Intelligence, Soft Robotics for Rehabilitation
Biotech for Sustainability	Engineer biological systems for food security and health	CRISPR-based drought-resistant rice, Microbial fuel cells
Intelligent Software Systems	Build scalable, secure, and user-centric AI platforms	NeuroFlight Soft (AI research framework
Interdisciplinary Integration	Combine AI + Biotech + Robotics	Bio-hybrid drones for precision agriculture

---

6. Key Activities

1. **Research Projects** – Peer-reviewed studies, prototypes, and publications
2. **Software Development** – Open-source tools, internal platforms, industry-grade apps
3. **Workshops & Training** – AI, robotics, and biotech bootcamps for students
4. **Industry Collaboration** – Partnerships with tech firms, startups, and NGOs
5. **Student Mentorship** – Thesis supervision, internships, research assistantships

---

7. Team Directory (Current as of Nov 2025)

Name	Role	Affiliation	Expertise
Prof. Dr. Dip Nandi	Principal Investigator	Associate Dean,FST,AIUB	AI, Robotics, Education
Prof. Dr. Md. Imtiaz Uddin	Scientist (Biotech)	Professor,Universiti Malaya	Plant Biotech, Genetics
S.M. Tawhid	Director & Lead Researcher	INTI International University, Malaysia.	Biomechatronic, Robotics, AI Systems
Kazi Tanzizul Haque	Co-Lead Researcher	Dr. Anwarul Abedin Institute of Innovation (D2A2I), AIUB.	ML, Computer Vision
Abdul Kader Mohim	Researcher	Dr. Anwarul Abedin Institute of Innovation (D2A2I), AIUB.	Embedded Systems
Sk. Shahed Ali	Researcher	AAIRL, AIUB	AI Ethics, NLP
Yash Rohan	Lead Developer	NeuroFlight Lab	Full-Stack, DevOps
Shuva Saha	Research Associate	AIUB	Data Science
Mohammad Tanvir	Research Assistant	Woosong University	Robotics Engineering
Sunipun Seemanta	Research Assistant	Ecodev Solutions	Data Analytics
Shahriar Hossain Jayed	Admin & Operations	AIUB	Project Management
Mahodi Al Kadir Zahin	Frontend Developer Intern	AIUB	UI/UX, React
Arpon Paul Amit	Research Intern	AIUB	AI

---

8. Infrastructure & Tools

- **Labs**: Controlled Avain Environment,Wet Lab
- **Compute**: GPU cluster (NVIDIA RTX A6000 x4), cloud credits (AWS/Google)
- **Software Stack**:
    - Python, PyTorch, TensorFlow, ROS2
    - Docker, Kubernetes, GitHub Actions
    - Unity/Unreal for simulation
    - Next.js, Tailwind (web)
- **Collaboration**: Slack, Notion, GitHub, Zotero

---

9. Policies & Guidelines

Code of Conduct

All members must:

- Respect intellectual property and give proper credit
- Follow ethical AI and biotech research standards
- Maintain data privacy and security
- Contribute to open-source where applicable

Publication Policy

- All research outputs aim for **peer-reviewed journals or conferences**
- Open-access preferred; preprints on arXiv
- Internal review before submission

Software Release Policy

- All internal tools: **MIT or Apache 2.0 license**
- Version control mandatory (Git)
- CI/CD pipeline required for production code

---

10. Contact & Communication

Channel	Details
Email	info@neuroflightlab.org
Website	www.neuroflightlab.org
LinkedIn	linkedin.com/company/neuroflightlab
Location	Mirpur-10, Dhaka,Bangladesh

---

11. Future Roadmap (2025–2027)

Year	Milestone
2025	Launch NeuroFlight Soft v1.0, Publish 4 papers, Host 2 workshops
2026	Secure 3 industry grant, Release open-source CV toolkit, Expand to 50+ members
2027	Establish Semicondructor lab (Malaysia or Netherlands), File 1 patent

---

Approval

Signed:

Prof. Dr. Dip Nandi Principal Investigator NeuroFlight Lab

Signed:

S.M. Tawhid Director & Lead Researcher NeuroFlight Lab