

CONTACT

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Taipei, Taiwan

CORE SKILLS

- Fiber Bragg Grating (FBG) Sensors
- Machine Learning
- Optical Fiber Sensing
- Free Space Optics
- Optical Network Design
- IoT Systems

PROGRAMMING

- Python
- C++/C
- Java
- PHP
- HTML/CSS
- JavaScript
- MySQL

CLOUD & TOOLS

- Amazon Web Services
- Microsoft Azure
- Ionic Framework
- Bootstrap

NETWORKING

- CCNA/CCNP
- MCSA/MCSE
- Computer Networking
- Wireless Networks
- Hardware & Networking

Michael Augustine Arockiyadoss

Ph.D. Researcher in Optical Fiber Sensing & Machine Learning

Internet of Things | Fiber Communication | Computer Hardware Enthusiast

PROFESSIONAL SUMMARY

Ph.D. student in Electro-Optical Engineering with expertise in Optical Fiber Sensing, Machine Learning, and IoT systems. Specializing in innovative solutions for fiber communication and intelligent sensing at National Taipei University of Technology. Proven track record in blending machine learning with fiber optic technology for real-world applications, with publications in IEEE Sensors Journal and hands-on experience in cloud platforms.

EXPERIENCE

PhD Research Assistant

National Taipei University of Technology - Optoelectronic Signal Processing Lab

September 2022 - Present | Taipei, Taiwan

- Conducting advanced research on Fiber Bragg Grating (FBG) sensors for temperature and strain detection
- Developing innovative machine learning technologies to enhance fiber sensor systems
- Specializing in Fiber Optic Sensors, Optical Network Design, and Free Space Optics
- Published multiple peer-reviewed papers in IEEE Sensors Journal and Electronics

Laboratory Assistant

St. Joseph's College - Jerome D'Souza Center for ICT

June 2017 - March 2022 | Tiruchirappalli, India

- Maintained Internet facilities across campus under Earn While Learn Scheme
- Supported campus digital transformation initiatives and website management
- Contributed to ICT and e-learning tool implementation in educational environment
- Enhanced institutional technological capabilities and infrastructure

EDUCATION

Doctor of Philosophy (Ph.D.) - Electro-Optical Engineering

National Taipei University of Technology, Taipei, Taiwan

September 2022 - September 2025 (Exp.) | GPA: 4.0/4.0

Focus: Fiber Bragg Grating (FBG) sensors, Machine Learning, Fiber Optic Networks

Master of Science - Computer Science

St. Joseph's College (Autonomous), Tiruchirappalli, India

June 2020 - March 2022 | CGPA: 8.4/10

Specialization: Wireless Networking, Microsoft Azure, Amazon Web Services

Bachelor of Computer Applications

St. Joseph's College (Autonomous), Tiruchirappalli, India

June 2017 - March 2020

Focus: Computer Hardware, Networking, Programming Fundamentals

KEY CERTIFICATIONS

- EF SET English Certificate C1 Advanced

EF SET

March 2025
- Understanding Data Science

DataCamp

April 2023
- Cloud Infrastructure and Services

ICT Academy of Tamil Nadu

December 2019
- Cloud Services and Servers

SYSTECH

August 2019
- Introduction to Cloud Computing

Udemy

September 2018
- Computer Networks & Networking

Udemy

August 2018
- Windows Server 2012R2

Udemy

March 2020
- Diploma in Computer Applications

TCEDS

January 2014

LANGUAGES

- English

Professional Proficiency
- Tamil

Native Proficiency

KEY PUBLICATIONS

**Integration of FBGs reflection and transmission spectra for sensing capacity enhancement with Transformer CNN demodulation**

*IEEE Sensors Journal, May 2025*

Novel FBG sensor system employing both reflective and transmission wavelengths with Free Space Optics integration. Developed Transformer CNN with positional encoding, achieving 2.24× faster training and 1.43× faster inference compared to traditional models.

**YOLO-v7 Improved with Adan Optimizer: Realizing Orphaned Fiber Bragg Grating to Sense Superimposed Personalized Dynamic Strain**

*IEEE Sensors Journal, October 2024*

Innovative motor condition monitoring approach using single FBG sensor with enhanced YOLO-v7 and Adan optimization for detecting abnormal vibrations in multiple running motors.

**Self-Healing Fiber Bragg Grating Sensor System Using Free-Space Optics Link and Machine Learning**

*Electronics, March 2024*

Integration of FSO with FBG sensors in self-healing architectures using hybrid autoencoder-CNN approach for enhanced temperature sensing reliability.

**Enhancing Smart City Safety and Utilizing AI Expert Systems for Violence Detection**

*Future Internet, January 2024*

AI-powered violence detection system combining YOLO v7 and LSTM networks, achieving 89.5% MAP for violent attack detection and 88.33% accuracy for action classification.

NOTABLE PROJECTS

**Truth Social DApp**

April 2023

Blockchain-powered social media application for identifying and preventing fraudulent content using machine learning and smart contracts. Technologies: Gnosis Chain, IPFS, Flask, Machine Learning.

**SJC Parent ERP System**

June 2020 - March 2022

Comprehensive mobile application connecting parents with student college activities including attendance tracking, exam results, fee management, and real-time notifications. Technologies: Ionic Framework, MySQL, HTML, CSS.

**Home Troubleshooting System**

June 2017 - March 2020

Web-based application for homeowners managing critical home repairs, accessibility modifications, and energy-efficient upgrades. Technologies: PHP, HTML, CSS, Bootstrap, MySQL.

PROFESSIONAL RECOGNITION

- **Resource Person** - Faculty Development Programme on "Convergence of Software Systems, AI, and Data Analytics" at Holy Cross College, December 2024
- **Session Topic:** "Integrating Machine Learning with Optical Fiber Sensing and Communication Technologies"
- **Research Impact:** Multiple publications in high-impact IEEE journals with innovative approaches to fiber optic sensing