Do Hai Son

Date of birth: August 28^{th}, 1998
Gender: Male
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Address: Hanoi, Vietnam

Education

2020 – 2023 **VNU University of Engineering and Technology** – Hanoi, Vietnam
Master degree in Telecommunications Engineering
GPA: 3.88/4.0.

2016 – 2020 **VNU University of Engineering and Technology** – Hanoi, Vietnam
BSc degree in Electronics and Communications Engineering

Work experience

Nov 2023 – Present **Information Technology Institute (ITI), Vietnam National University** – Hanoi, Vietnam
Role: Researcher

Aug 2020 – July 2023 **Advanced Institute of Engineering and Technology (AVITECH), VNU University of Engineering and Technology** – Hanoi, Vietnam
Role: Researcher

Sep 2022 – Dec 2022 **PRISME Laboratory, École polytechnique de l'université d'Orléans (Polytech Orléans)**, France
Role: Internship student

Research experience

May 2022 – Present **ASEAN-IVO Project: Agricultural IoT based on Edge computing** [**Work package No. 2**]
Responsibility: An agricultural IoT security framework based on authentication, data preservation, and encryption.

Jul 2021 – Present **VNU-UET Project: Channel estimation using side information for massive MIMO systems**
Responsibility: We consider the antenna structures of massive MIMO and integrate side information (e.g., DoA, DoD) to enhance the performance channel of estimation algorithms.

Jun 2020 – Aug 2023 **NAFOSTED Project: System identification: from blind to informed paradigm**
Responsibility: We aim to develop an "InSI" toolbox on MATLAB which provides a set of tools to analyse, evaluate and design complicated systems, specially in wireless communications.

Jun 2020 – Nov 2022 **ASEAN-IVO Project: Cyber-attack detection and information security in Industry 4.0** [**Certificate**]
Responsibility: We aim to provide tools to enhance cyber-security in Industry 4.0, i.e., blockchain-based Smart Grid, collaborative learning for cyberattacks detection.

Oct 2019 – Jun 2020 **Graduate Thesis: Direction of Arrival on SDR**
Responsibility: We implemented MUSIC algorithm on GNU Radio and SDR devices, i.e., bladeRFx115).

Mar 2019 – Oct 2019 **Self-Project: WiFi Map Indoor Positioning System**
Responsibility: We focused on analyzing RSSI data using traditional machine learning methods (i.e., SVM). We then deployed and verified in a robot using Arduino KIT.

Teaching experience

Sep-Nov/2023 **AIT 2003: Data Analysis with Python** (VNU University of Engineering and Technology)

Sep-Nov/2023 **INT 1008: Introduction to Programming** (VNU University of Engineering and Technology)

Sep-Dec/2021 **Teaching assistant, ELT 3243: Principles of Communication** (VNU University of Engineering and Technology)

Jul-Aug/2021 **Teaching assistant, ELT 2035: Signals and systems** (VNU University of Engineering and Technology)

Jan-Jun/2021 **Teaching assistant, ELT 3144: Digital Signal Processing** (VNU University of Engineering and Technology)

Publications

Preprints

1. Tran Viet Khoa, **Do Hai Son**, Dinh Thai Hoang, Nguyen Linh Trung, Tran Thi Thuy Quynh, Diep N. Nguyen, Nguyen Viet Ha, Eryk Dutkiewicz, "Collaborative Learning for Cyberattack Detection in Blockchain Networks," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, pp. 1–12, Jul. 2023. (minor revisions) [https://arxiv.org/abs/2203.11076]

2. Tran Viet Khoa, **Do Hai Son**, Chi-Hieu Nguyen, Dinh Thai Hoang, Nguyen Linh Trung, Diep N. Nguyen, Tran Thi Thuy Quynh, Trong-Minh Hoang, Nguyen Viet Ha, and Eryk Dutkiewicz, "Securing Blockchain Systems: A Novel Collaborative Learning Framework for Transactions and Smart Contracts Attack Detection," *IEEE Transactions on Mobile Computing*, pp. 1–13, Sept. 2023. (under review) [https://arxiv.org/abs/2308.15804]

3. Tran Thi Thuy Quynh, Ngo K. Hoang, Nguyen Van Ly, **Do Hai Son**, and Nguyen Linh Trung, "Thiết lập nền tảng SDR cho hệ thống OFDM," trong Truyền thông chuyển tiếp hai chiều: Lý thuyết và Thực nghiệm, Nhà xuất bản Đại học Quốc gia Hà Nội, pp. 145-228, Jul. 2022. (preprint)

Journal articles

1. Bui Minh Tuan, Tran Viet Khoa, **Do Hai Son**, Nguyen Linh Trung, Tran Thi Thuy Quynh, Nguyen Ngoc Hoa, Nguyen Viet Ha, Nguyen Dai Tho, Le Quang Minh, "A New Framework for Cyber Risk Assessment for Industry 4.0 and Recommendations for Vietnam," *REV Journal on Electronics and Communication*, vol. 13, no. 3-4, pp. 1-17, Jul-Dec. 2023.

Conference & Workshop articles

1. Tran Viet Khoa, **Do Hai Son**, Dinh Thai Hoang, Nguyen Linh Trung, Tran Thi Thuy Quynh, Diep N. Nguyen, Nguyen Viet Ha, and Eryk Dutkiewicz, "Real-time Cyberattack Detection with Collaborative Learning for Blockchain Networks," in *IEEE Wireless Communications and Networking Conference (WCNC)*, Dubai, UAE, pp. 1-6, Apr. 2024.

2. **Do Hai Son**, Tran Thi Thuy Quynh, and Le Quang Minh, "RANDAO-based RNG: Last Revealer Attacks in Ethereum 2.0 Randomness and a Potential Solution," in *International Workshop on ADVANCEs in ICT Infrastructures and Services (ADVANCE'2024)*, Hanoi, Vietnam, pp. 1-4, Feb. 2024.

3. **Do Hai Son**, Karim Abed-Meraim, Tran Trong Duy, Nguyen Linh Trung, and Tran Thi Thuy Quynh, "On the Semi-Blind Mutually Referenced Equalizers for MIMO Systems," in *Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, Taipei, Taiwan, pp. 278-283, Nov. 2023.

4. **Do Hai Son** and Tran Thi Thuy Quynh, "Impact Analysis of Antenna Array Geometry on Performance of Semi-blind Structured Channel Estimation for massive MIMO-OFDM systems," in *IEEE Statistical Signal Processing Workshop (SSP)*, Hanoi, Vietnam, pp. 314-317, Jul. 2023.

5. **Do Hai Son**, Nguyen Huu Hung, Pham Duy Hung, and Tran Thi Thuy Quynh, "Implementing Channel Estimation in Robotics Networks Using Software-Defined Radio," in *26th National Conference on Electronics, Communications and information Technology*, Hanoi, Vietnam, Dec. 2023.

6. **Do Hai Son**, Tran Thi Thuy Quynh, Tran Viet Khoa, Dinh Thai Hoang, Nguyen Linh Trung, Nguyen Viet Ha, Dusit Niyato, Diep N. Nguyen, and Eryk Dutkiewicz, "An effective framework of private Ethereum blockchain network for smart grid," in *International Conference on Advanced Technologies for Communications (ATC)*, Ho Chi Minh City, Vietnam, pp. 312-317, Oct. 2021. [**Best Student Paper Award**]

7. **Do Hai Son**, Tran Thi Thuy Quynh, "Synchronize multi-SDRs to implement DoA system," in *24th National Conference on Electronics, Communications and information Technology*, Hanoi, Vietnam, Dec. 2021.

8. **Do Hai Son**, Tran Duc Manh, and Tran Thi Thuy Quynh, "WiFi Maps Indoor Positioning System," in *22nd National Conference on Electronics, Communications and information Technology*, Hanoi, Vietnam, Dec. 2019.

Honors and scholarships

2022 Top 13 AI Tech Matching on the AI4VN 2022: "Collaborative Learning for Cyberattack Detection in Blockchain Networks".

2021 Best Student Paper Award of 2021 International Conference on Advanced Technologies for Communications (ATC).

2020 Excellent Thesis Award (VNU University of Engineering and Technology)
Awarded to the best undergraduate theses from the school.

2019 Certificate of merit for excellent student awarded (VNU University of Engineering and Technology)

2019 Scholarship for the excellent student awarded (VNU University of Engineering and Technology)
Awarded to top 5 students from the class.

Professional activities

TPC member
- IEEE Wireless Communications and Networking Conference (WCNC), Dubai, UAE, 21–24 Apr. 2024.

Peer review
- IEEE JSAC special issue on Intelligent Blockchain for Future Communications and Networking: Technologies, Trends and Applications (IEEE JSAC SI-IntelligentBLK).
- 2022 International Conference on Advanced Technologies for Communications (ATC), Hanoi, Vietnam, 20-22 Oct. 2022.

Technical supporter
- 22nd IEEE Statistical Signal Processing (SSP) workshop, Hanoi, Vietnam, 2-5 Jul. 2023.

Technical skills

Programming languages
Proficient in: Python, MATLAB, JavaScript, Solidity
Familiar with: C/C++, C#, Go

Hardware
Software Define Radio (SDR), IoT Gateway Home/Industrial, Jetson/BeagleBone/Arduino/ESP8266, IoT sensors

Languages

English: 2023 VSTEP certificate (7.0/10.0).