

CURRICULUM VITAE – DUC MANH NGUYEN

PERSONAL INFORMATION

Dr. Duc Manh Nguyen

married

Tel: +82 10-6617-1811

Email: nguyenmanhduc18@gmail.com

Address: Migeum station, Bundang district, Seongnam
City, Gyonggi Province, Korea.

<https://www.linkedin.com/in/ducmanhnguyen/>

https://www.researchgate.net/profile/Duc_Nguyen275

<https://publons.com/researcher/3516661/nguyen-manh-duc/>

<https://scholar.google.com/citations?user=ZpKPvGEAAAJ&hl=en>

<https://orcid.org/0000-0002-4527-3358>



I was born in Hai-Duong City, Viet-Nam in November, 1989. I have received my bachelor degree of electronic and telecommunication from Ha-Noi university of science and technology (HUST) in June, 2012 and my Ph.D. degree of electrical engineering from University of Ulsan (UOU), Korea in Feb. 2020. From 2012 to 2014, I was a software engineer at Samsung Electronic Viet-Nam. From 2014 to 2015, I was a system engineer at VNPT (Viet-Nam Posts and Telecommunications Group). Now, I am working as a researcher engineer at G2Touch company in Pankyo Silicon valley, Seongnam city Korea since March, 2020.

JOB EXPERIENCES

2020 March → present: Researcher Engineer at G2touch, Pankyo silicon valley, Seongnam city, Korea

Jobs: I am working at System on chip team, IC design and development center where we design and produce the IC touch controller for SAMSUNG and BOE touch screen.

1. Simulator and analysis for signal between active pen and touch screen.
2. Freq. based analyzer for signal between active pen and touch screen.
3. ASIC design for mixed signal between active pen and touch screen.
4. ASIC design for signal processing modules such as Error correcting/detecting codes, Fast Fourier transform, Digital filter, Equalizer, Memory, Transmitter.
5. System on chip design with Arm Cortex-M processor.
6. AFE-IC designs such as ADC design, palm-rejection algorithm.
7. A patent on communication between active pen and touch screen (on draft).

2015 February → February, 2020: Researcher assistant, Coding and information theory lab, UOU.

Research interests:

1. My research topics is quantum information theory, which include quantum error correction codes, quantum cryptography based on quantum algorithm, and quantum network based on quantum walks.
2. Finished numerous peer-review international papers, international conferences papers, and Korea domestic conference papers on quantum information topic researches.

3. Finished an IoT project. It aims to design the location estimation algorithm for Indoor position. I designed a calculation algorithm and test it with Arduino Nano board with HM-10, BLE MIDASCON, and LCD I2C.
4. A joint research project with G2touch company. It aimed to analyze the communication protocols (frame structure, modulation techniques, error control codes) in active pen MPP2.0 (Microsoft pen protocol 2.0) and design the Frequency Analyzer tool based on FFT to analysis pen signal (MATLAB GUI is made to read signal from txt file and show in time and frequency domain).

Lab website: <https://sites.google.com/site/citulsan/home>

2014 June → 2015 Jan: Network engineer, Advanced Network System Viet-Nam (ANSV), VNPT Technology, VNPT, Ha-Noi, Viet-Nam.

Jobs: maintain and deploy for OSP platform, Instant Convergent Charging services for Intelligent Network of Vietnam Mobile Telecom Services Company.

2012 September → 2014 May: Software engineer, Samsung electronic Viet-Nam for Mobile Research and Development Center (SVMC), SEV, Ha-Noi, Viet-Nam.

Jobs: Customer adapted modification for Samsung android smart-phone models for South East Asia region.

2012 January → March Internship student, Panasonic research and development center Viet-Nam company (PRDCV), Panasonic Viet-Nam, Ha-Noi, Viet-Nam.

Jobs: simulated a Hachune 3D model by using object rendering engines of Orge 3D and Irrlicht engine. Investigated their performance and selected a suitable 3D engine for e-Cockpit project.

Part-time jobs: Additional works

1. Book co-author: I am going to propose a book to CRC Press. The title is Role of Technology in the Sustainable development of Smart Cities. I handle a chapter of Flexible communications technologies. (enter production will be 01 April, 2021)
2. Technical Committee: INFOCOMP 2019, 2020. ICTCC and ICCASA 2019, 2020.
3. Journal Reviewer: IEEE Communication letter. IEEE Access. International journal of Modern Physical B. Indian Journal of Physics.
4. Teaching assistant: Digital signal processing class, UOU 2019.

COMPUTER SKILLS

Programming Verilog HDL, MATLAB, C/C++, LaTeX, Python, Shell-script.

Platform Arm Cortex-M processor; Altera DE0-CV, DE10-Nano; Arduino; Anaconda; Open GL; Orge 3D; projectQ; Android SDK.

Transformation 1D, 2D Fourier transformation for signal, images processing. Hadamard transformation. Wavelet transformation. Hilbert transformation.

Computation Developed computation tools by MATLAB for quantum computing. Used MAGMA for Computer and Algebra calculation.

Mathematical Coding theory, Abstract algebra, Linear system

OS Windows, Unix, Linux.

Servers and Databases SUN Solaris, HP server, Storage STK, Alcatel Omni Switch, Cissco Router, Oracle.

EDUCATION

Ph.D. degree in school of electrical engineering, UOU (03/2015-03/2020).
Thesis advisor: Prof. Sunghwan Kim (School of electrical engineering, UoU)
Thesis title: Research on quantum error correction code and quantum algorithms.

Bachelor degree in electronics and telecommunications engineering from Ha-Noi university of science and technology (HUST) (09/2007-06/2012).
Thesis advisor: Dr. Cong Thanh Pham (School of Electronic and Telecommunication engineering (SET), HUST).
Thesis title: Study on GA (genetic algorithm) and PSO (particle swarm optimization) for optimization of reflect-array antenna.

REFEREES

- 1** Prof. Sunghwan Kim, School of Electrical and Electronic Engineering, University of Ulsan (UOU), Korea, +82-52-259-1401, email: sungkim@ulsan.ac.kr
- 2** Dr. Cong Thanh Pham, School of Electronic and Telecommunications, Ha Noi university of Sciences and Technologies (HUST), Ha-Noi, Viet-Nam, +84-4-38692242, email: cong.phamthanh@hust.edu.vn
- 3** Dr. Nam Hoang Vuong, School of Electronic and Telecommunications, Ha Noi university of Sciences and Technologies (HUST), Ha-Noi, Viet-Nam, +84-4-, email: namvh-fet@mail.hut.edu.vn

ADDITIONAL INFORMATION

Language Vietnamese (native), English (fluent), Korean (intermediate).

Hobby Reading historical, mathematical, and sciences. Watching historical, comedy films. Listening to classic, folk, country music. Playing tennis, soccer, football fantasy.

Update August, 2020.

PUBLICATIONS

All my papers are listed as follows. Here, **C** stands for conference paper and **J** stands for Scopus or SCI/SCIE peer-reviewed, international journal papers:

- (J1)** D.M. Nguyen, S. Kim. *Minimal-Entanglement Entanglement-Assisted Quantum Error Correction Codes from Modified Circulant Matrices*. Symmetry. 9(7) pp(122) (7/2017). (SCIE, Q2, IF(1.457)) <https://doi.org/10.3390/sym9070122>
- (J2)** D.M. Nguyen, S. Kim. *Quantum stabilizer codes construction from Hermitian self-orthogonal codes over $GF(4)$* . Journal of Communications and Networks. 20(3) pp(309-315) (6/2018). (SCIE, Q2, IF(1.252)) <https://doi.org/10.1109/JCN.2018.000043>
- (J3)** D.M. Nguyen, S. Kim. *New Constructions of Quantum Stabilizer Codes Based on Difference Sets*. Symmetry. 10(11) pp(655) (11/2018). (SCIE, Q2, IF(1.256)) <https://doi.org/10.3390/sym10110655>
- (J4)** D.M. Nguyen, S. Kim. *Quantum Key Distribution Protocol Based on Modified Generalization of Deutsch-Jozsa Algorithm in d-level Quantum System*.

- International Journal of Theoretical Physics, 58(1) Jan. 2019. (SCIE, Q3, IF(1.121)) <https://doi.org/10.1007/s10773-018-3910-4>
- (J5) **D.M. Nguyen**, S. Kim. *Multi-Bits Transfer Based on the Quantum Three-Stage Protocol with Quantum Error Correction Codes*. International Journal of Theoretical Physics, 58(6) Apr. 2019. (SCIE, Q3, IF(1.121)) <https://doi.org/10.1007/s10773-019-04098-4>
- (J6) **D.M. Nguyen**, S. Kim. *The fog on: Generalized teleportation by means of discrete-time quantum walks on N -lines and N -cycles*. Modern Physics Letters B. 33(23), 1950270, Aug. 2019. (SCI, Q4, IF(0.731)) <https://doi.org/10.1142/S0217984919502701>
- (J7) M.Zidan, A. Abdel-Aty, **D.M. Nguyen**, S. Hegazy, Y. Al-Sbou, H. Eleuch and M. Abdel-Aty, *A Quantum Algorithm based on Entanglement Measure for Classifying Boolean Multivariate Function into Novel Hidden Classes*. Results in Physics, 15, 102549, 2019. (SCIE, Q1, IF(3.02)) <https://doi.org/10.1016/j.rinp.2019.102549>
- (J8) **D.M. Nguyen**, S. Kim. *New construction of binary and non-binary quantum stabilizer codes based on symmetric matrices*. International Journal of Modern Physics B, 33(24), 1950274, 2019. (SCI, Q4, IF(0.863)) <https://doi.org/10.1142/S0217979219502746>
- (J9) **D.M. Nguyen**, S. Kim. *Quantum Stabilizer Codes Based on a New Construction of Self-orthogonal Trace-inner Product Codes over $GF(4)$* . International Journal of Modern Physics B, 34 (5), 2050017, 2019. (SCI, Q4, IF(0.863)) <https://doi.org/10.1142/S0217979220500174>
- (J10) **D.M. Nguyen**, S. Kim. *A novel construction for quantum stabilizer codes based on binary formalism*. International Journal of Modern Physics B, 34 (8), 2050059, 2020. (SCI, Q4, IF(0.863)) <https://doi.org/10.1142/S0217979220500599>
- (J11) **D.M. Nguyen**, S. Kim. *A Novel Quantum No-Key Protocol for Many Bits Transfer with Error Correction Codes*. Advances in Science, Technology and Engineering Systems 5 (2), 781-785, 2020. (Scopus) [10.25046/aj050298](https://doi.org/10.25046/aj050298)
- (J12) Binh A. Nguyen, Viet Q. Tran, Khoa D. Ta, Manh Hoang, Thien V. Truong, Nhan D. Nguyen, **D.M. Nguyen**, *Simulation of Quantum Computation via MAGMA Computational Algebra System*. Int. J. of Advanced Trends in Computer Science and Engineering, 9 (2), 1757-1761, 2020. (Scopus) <https://doi.org/10.30534/ijatcse/2020/130922020>
- (J13) Binh A. Nguyen, Viet Q. Tran, Khoa D. Ta, Manh Hoang, Thien V. Truong, Nhan D. Nguyen, **D.M. Nguyen**, *A Novel Framework for Simulation of Quantum Information System*. Int. J. of Advanced Trends in Computer Science and Engineering, 9 (2), 1752-1756, 2020. (Scopus) <https://doi.org/10.30534/ijatcse/2020/129922020>
- (J14) GN Pham, BA Nguyen, VQ Tran, KD Ta, PH Nguyen, **D.M. Nguyen**, *Simulation of Resources for Quantum Algorithms and Quantum Communication Protocols based on a Novel Framework*. Int. J. of Advanced Trends in Computer Science and Engineering, 9 (3), 3125-3129, 2020. (Scopus) [10.30534/ijatcse/2020/97932020](https://doi.org/10.30534/ijatcse/2020/97932020)
- (J15) Hieu V. Dang, Tung V. Nguyen, Manh Hoang, Viet Q. Tran, Nhan D. Nguyen and **D.M. Nguyen**, *Design and verification of novel classical error*

- control codes using VERILOG Hardware Description Language. Int. J. of Advanced Trends in Computer Science and Engineering, 9 (4), 2020. (Scopus)
- (J16) Phuong H. Lai, Manh Hoang, Viet Q. Tran, Tung V. Nguyen, Thien V. Truong, Phong H. Nguyen and **D.M. Nguyen**, *Analysis and implementation of SDF Radix-2 FFT processor using VERILOG Hardware Description Language*. Int. J. of Advanced Trends in Computer Science and Engineering, 9 (4), 2020. (Scopus)
- (C1) **D.M. Nguyen**, S. Kim. *A Study on Simulation of Quantum Error Correction Codes by Using MATLAB Program*. in Proceedings of Symposium of the Korean Institute of communications and Information Sciences. pp(248-249) (1/2016). <http://www.dbpia.co.kr/Journal/ArticleDetail/NODE06609989>
- (C2) F.T.Z. Khanam, **D.M. Nguyen**, S. Kim. *Improved Reversible Data Hiding in Encrypted Image Using New Fluctuation Function*. in Proceedings of Symposium of the Korean Institute of communications and Information Sciences. pp(404-405) (6/2016). <http://www.dbpia.co.kr/Journal/ArticleDetail/NODE06739434>
- (C3) **D.M. Nguyen**, S. Kim. *Construction and complement circuit of a quantum stabilizer code with length 7*. in Proceedings of Eighth International Conference on Ubiquitous and Future Networks (ICUFN), Wien, Austria. pp(332-336) (7/2016). <https://doi.org/10.1109/ICUFN.2016.7537043>
- (C4) **D.M. Nguyen**, S. Kim. *A study on quantum stabilizer codes with Length 7*. in Proceedings of 12th International Forum on Strategic Technology (IFOST, Ulsan, Korea). (5/2017).
- (C5) **D.M. Nguyen**, S. Kim. *Construction of quantum stabilizer codes from self-orthogonal linear codes*. in Proceedings of Symposium of the Korean Institute of communications and Information Sciences. pp(248-249) (6/2018). <http://www.dbpia.co.kr/Journal/ArticleDetail/NODE07512514>
- (C6) **D.M. Nguyen**, S. Kim. *Application of additive codes over $GF(4)$ on quantum error correction codes*. in chapter of: Frontiers in Intelligent Computing: Theory and Applications pp 116-122. (01/2020). https://doi.org/10.1007/978-981-32-9186-7_13
- (C7) H.T.Dao, **D.M. Nguyen**, S. Kim. *Water-filling-based pilot power optimization to maximize sum rate of target cell in massive MIMO systems*. in Proceedings of Symposium of the Korean Institute of communications and Information Sciences. pp(215-216) (1/2019). <http://www.dbpia.co.kr/journal/articleDetail?nodeId=NODE08003276>
- (C8) **D.M. Nguyen**, S. Kim. *A Study on a Quantum Three Pass Protocol for Multiple Bits Transfer*. in Proceedings of Symposium of the Korean Institute of communications and Information Sciences. (6/2019). <http://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE09234961>
- (C9) **D.M. Nguyen**, S. Kim. *A quantum three pass protocol with phase estimation for many bits transfer*. in Proceedings of International Conference on Advanced Technologies for Communications (ATC 2019, Ha-Noi, Viet-Nam). (10/2019). [10.1109/ATC.2019.8924514](https://doi.org/10.1109/ATC.2019.8924514)