

# CURRICULUM VITAE

Ir. Nazrul Effendy, M.Eng., Ph.D.

## Address:

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## Educational Background:

- 2009: PhD degree from the sandwich program between Chulalongkorn University (Digital Signal Processing Research Laboratory, Division of Communication, Electrical Engineering Department) and Tokyo Institute of Technology (Furui Laboratory, Computer Science Department)
  - Research Field: Speech Recognition
  - Advisor: Ass. Prof. Dr. Somchai Jitapunkul (Chulalongkorn Univ.)
  - Co-advisor: Prof. Dr. Sadaoki Furui (Tokyo Institute of Technology)
  - Courses:
    - Statistical Digital Signal Processing
    - Speech Processing
    - Pattern Recognition and Information Retrieval
    - Research Frontier in Speech Recognition
  - Ph.D. Thesis: A study of prosodic features for Indonesian speech recognition
  - September 2005-August 2006: Research student at Furui Laboratory, Computer Science and Engineering Department, Tokyo Institute of Technology under the guidance of Prof. Dr. Sadaoki Furui -> conducted research on the automatic utterance type recognizer of Indonesian intonation.
- 1998-2001, Master of Engineering, Electrical Engineering Study Program, Program of Graduate Studies, Gadjah Mada University, Indonesia
  - Courses:
    - Random Process, Logics, Neural-Fuzzy Systems, Digital Processing of Signal, Numerical Computations, Electronic System Integration, The Future of Electronic Engineering, Image Processing, Control Systems, Electrical Engineering Laboratory, Electronic System Design Principle, Methodology of Research.
  - Thesis: Design of Monitoring System of Abnormality of Electrocardiograph Signals Based on Their Frequency Spectrum Recognition using Artificial Neural Networks (Advisors: Prof. Dr. Ir. Thomas Sri Widodo, DEA and Dr. Ir. Widi Setiawan.)
- 1992-1998, Sarjana Teknik (engineer), Instrumentation Engineering, Department of Nuclear Engineering, Gadjah Mada University, Indonesia
  - Courses:



Optical Sciences Center at University of Arizona, Held in Chulalongkorn University, January 12, 2004

- Sciences and Global Communication based on Optical Science and Technology, Prof. Nicolaas Bloembergen (a Nobel Laureate for Physics in 1981, <http://www.optics.arizona.edu/Faculty/Resumes/Bloembergen.htm>), the Optical Sciences Center at University of Arizona, Held in Chulalongkorn University, January 12, 2004.
- TOEFL Preparation Course, English Training Center, Gadjah Mada University, 1998.
- English Course, Intensive English Course, Yogyakarta, Indonesia, 1998-1999
- Japanese Language Course, Indonesia – Japan-Indonesia Institute, Yogyakarta, Indonesia, 1999
- Training of Writing of Teaching Material, Gadjah Mada University, 2001

### **Scholarships/Grant/Awards**

- Short Term Research Program in Japan, the grant consists of round trip airfare, local transportation in Japan, accommodation in Japan, Shinoda Laboratory, Tokyo Institute of Technology, Japan, supported by AUN/SEED Net, August 11 – Sept 8 2009.
- Grant of the Development of Teaching Material, Gadjah Mada University, 2009 (10.000.000,- IDR; director)
- Grant of Student Creativity Program in Technology field, Directorate General of High Education, Department of National Education, Republic of Indonesia, 2009 (5,000,000,- IDR, advisor).
- Grant of the Development of Research Based Learning, K1 Competition Grant Program of Information and Communication Technology, Directorate General of High Education, Department of National Education, Republic of Indonesia, 2008 (25.000.000,- IDR; director)
- Research Grant, Faculty of Engineering, Gadjah Mada Universitas, 2008 (7.500.000,- IDR; director)
- Grant of Student Creativity Program in Technology field, Directorate General of High Education, Department of National Education, Republic of Indonesia, 2008 (2 team: artificial leg robot and Control system of the soil humidity for ornamental plants), 1 team was chosen as the finalist in the National Student Scientific Week and awarded the silver medal (each team was awarded 5,000,000,- IDR, advisor).
- Soft Skills Teaching Grant, A2 Competition Grant Program (Rp 5.000.000,-), Directorate General of High Education, Department of Education, Indonesia, September 2007 – February 2008
- Malaysian Technical Cooperation Program (MTCP) Fellowship, Multimedia University, tuition fee, air travel, and living allowance, May 12 – May 27, 2007
- AUN/SEED-Net (JICA) Scholarships, Doctoral Sandwich Program, Chulalongkorn University-Tokyo Institute Of Technology, tuition fee, air travel, book allowance, and living allowance (since 27 October 2003 for 3 years)
- JICA, Research student, Department of Computer Science, Tokyo Institute of Technology, Tokyo, Japan, September 2005 – August 2006.
- Grant of Student Creativity Program in Technology field, Directorate General of High

Education, Department of National Education, Republic of Indonesia, 2001 (Title: A design of Diode laser generator for the teeth therapy, advisor)

- URGE Scholarship, tuition fee and living allowance, in persuading master degree in Gadjah Mada University, 1998-2001
- Danamon Bank Scholarship, Living allowance, in persuading bachelor degree in Gadjah Mada University, 1997-1998
- Astra Scholarship, living allowance, in persuading bachelor degree in Gadjah Mada University, 1996-1997
- PPA Scholarship, living allowance, in persuading bachelor degree in Gadjah Mada University, 1995-1996
- Supersemar Scholarship, living allowance, in persuading bachelor degree in Gadjah Mada University, 1994-1995

### **Work Experiences:**

- Visiting Researcher, Tokyo Institute of Technology, August 11- September 8, 2009
- Chairman of Study Program, Engineering Physics Study Program, Department of Engineering Physics, Faculty of Engineering, Gadjah Mada University, May 2007 – present.
- Lecturer, Engineering Physics Department, Gadjah Mada University, 1998 –present (current position: assistant professor)
  - Engineering Drawing (2007 – present)
  - Artificial Intelligence (Artificial Neural Networks, Fuzzy Logic and Expert Systems) (2000, 2008)
  - Intelligent Control (2008-present)
  - Modern Control (2008)
  - Signal and Systems (First semester 2000 – 2003, 2007-present)
  - Physics II (1998, 2007)
  - Medical Sensors (Applied Physics II) (2002 – 2003)
  - Medical Instrumentation I (2001 – 2003)
  - Medical Instrumentation II (2000 – 2003)
  - Instrumentation and Control Engineering (Second Semester 2000 – 2003)
  - Medical Imaging (Medical Instrumentation III) (2001 – 2003)
  - Basic Electronics (2000 – 2003)
  - Automatic Control Engineering (1999)
  - Mathematics (1998)
- Researcher, Engineering Physics Department, Gadjah Mada University, 1998 -2003, 2007 – present
- Manager, Information and Communication Technology Team, Department of Engineering Physics, Faculty of Engineering, Gadjah Mada University
- Manager, procurement team, Department of Engineering Physics, Faculty of Engineering, Gadjah Mada University
- Member of the task force in the project of “Communication device for under water vehicle”, a cooperative project between Department of Defense - Republic of Indonesia, PT PAL, PT Pindad, PT LEN, Gadjah Mada University, Bandung Institute of Technology, University of Indonesia, Sepuluh November Institute of Technology, and STTAL, 2008

- Consultant (programmer and team director), instrumentation and software of the environmental monitoring system, the center of nuclear fuel and accelerator technology, Indonesian Atomic Energy Agency (BATAN), Republic of Indonesia, 2008
- Informal Tutor of 'Digital Signal Processing' for the International Master Student at Department of Electrical Engineering, International School of Engineering, Chulalongkorn University, 2004
- Instructor, "Mark V Speedtronics Course: MODBUS Configuration, External Communication Links", PT Indonesia Power-Center for Energy Studies, Gadjah Mada University, April 2003
- Instructor, Radioactive Source Replacement, Training of Radiation Protection Operator, February 2002
- Programmer and Analyst, Modeling and Implementation of Evaporator using Borland C++ Builder 4, 2002
- Visiting Lecturer, Language Theory and Automata, Department of Informatics Engineering, Institute of Computer and Informatics Management "Proactive", Yogyakarta, 2002
- Visiting Lecturer, Multimedia, Department of Informatics Engineering, Institute of Computer and Informatics Management "Proactive", Yogyakarta, 2002
- Visiting Lecturer, Artificial Neural Networks, Department of Informatics Engineering, Technology University of Yogyakarta, 2002
- Instructor, Radioactive Source Replacement Laboratory, Training of Radiation Protection Operator, Gadjah Mada University, 2000
- Tutor, Matlab, Engineering Physics Department, Gadjah Mada University, 1999
- Programmer and analyst, Design of Radioactive Waste Container, Center of Energy Studies, Gadjah Mada University, 1998
- Vice Director, Academy of Management, Informatics and Computer "Aster", Yogyakarta, 1998
- Instructor, Simulation and modeling of Environmental problems using Simulink, Indonesian Atomic Energy Agency, Yogyakarta, 1998
- Instructor, Radioactive Source Replacement Laboratory, Training of Radiation Protection Operator, Gadjah Mada University, 1998
- Tutor, Mathematics, Education Institute of Blue Campus, Yogyakarta, 1994

### **Organization**

- Chairman of Study Program, Engineering Physics Study Program, Department of Engineering Physics, Faculty of Engineering, Gadjah Mada University, May 2007 – present.
- Chairman, Singkep Family Association Scholarship Committee, April 2007 – present.
- Member, International Speech Communication Association (ISCA), July 2004 – 2007.
- Member, Indonesian Society for Soft-Computing
- Chairman, Indonesian Community in JICA – Tokyo International Center, December 2005 – August 2006.
- Member, General Election Committee – Indonesian Student Association in Thailand, 2005
- Chairman, Indonesian Moslem Student Association in Thailand, November 2003 –

February 2005

- Member, Singkep Family Association Scholarship Committee, 2005-present
- Chairman, Singkep Family Association Scholarship Committee, 2002-2004
- Secretary, Satria Nusantara “Breathing” Martial Art, Bulaksumur Branch, Yogyakarta, 2001 - 2004
- Chairman, Engineering Physics Department Alumni Scholarship Committee, 2002- 2003
- Member, Committee of Matriculation Performance Evaluation for PBUD students, Gadjah Mada University, 2003
- Member, Committee of Curriculum Development, Engineering Physics Study Program, Gadjah Mada University, 2001 - 2003
- Member, Committee of Curriculum Development, Nuclear Engineering Study Program, Gadjah Mada University, 2001
- Member, local committee of examination and admission of State Universities, Yogyakarta, Indonesia, 2001-2003
- Chairman, Singkep, Senayang and Lingga Student Association in Yogyakarta, 1995-1996

#### **Industrial Site Visits:**

- Paiton Steam Power Plants, Paiton, East Java, February 28, 2009
- PT Petikemas Surabaya, East Java, [www.tps.co.id](http://www.tps.co.id) , February 27, 2009
- PT Petrokimia Gresik, Gresik, East Java, Instruments, SCADA, February 27, 2009
- Processing Unit of Oil (Unit Pengolahan V), PT Pertamina, Cilacap, Central Java, February 2008
- PT Holchim, Cilacap, Central Java, February 2008
- Kamojang Power Plants, Garut, West Java, February 2008
- PT Polidayaguna, Ungaran, Central Java, 2008
- PT Krakatau Steel, Cilegon, West Java, February 2007
- PT Texmaco, February 2007
- Suralaya Steam Power Plants, Merak, West Java, February 2007
- PT Indonesia Power, Steam and Gas Power Plants, Semarang, April 2003

#### **Publications:**

##### **International Journal:**

- **Nazrul Effendy**, Koichi Shinoda, Sadaoki Furui, Somchai Jitapunkul, Automatic Recognition of Indonesian Declarative Questions and Statements Using Polynomial Coefficients of the Pitch Contours, Acoustical Science and Technology, July 2009

##### **International Conference:**

- **Nazrul Effendy**, Faridah, I Nyoman Kusuma Wardana, Esti Puspitaningrum, A novel Indonesian intonation recognition system using binary matrix conversion of the pitch contour, proceedings of International Conference on Telecommunications (ICTel) 2008, Bandung, August 19-21, 2008, ISSN: 1858-2982 (best paper)

- **Nazrul Effendy** and Jitapunkul, S. Improvement of Intonation recognition for Indonesian speech based on Fujisaki model, proceeding of Field-wise seminar, Chulalongkorn University, 2006
- **Nazrul Effendy**, Maneenoi, E., Charnvivit, P., Jitapunkul, S., Intonation Recognition for Indonesian Speech Based on Fujisaki Model, proceeding of International Conference on Spoken Language Processing (Interspeech 2004), p. 2973-2976, Jeju Island, Korea, 2004, ISSN: 1225-441x

#### **National Journal:**

- **Nazrul Effendy**, Faridah, I Nyoman Kusuma Wardana, Esti Puspitaningrum, A novel Indonesian intonation recognition system using binary matrix conversion of the pitch contour, Jurnal Penelitian dan Pengembangan TELEKOMUNIKASI, June 2008, vol. 13, No.1, hal 1-5, ISSN: 1410-7066, accredited by Directorate of Higher Education, Department of National Education No. 48/DIKTI/Kep/2006
- **Nazrul Effendy**, Adnan Syarafi, Arditya Yulinggar, dan I Nyoman Kusuma Wardana, the application of fuzzy logic controller on the photovoltaic panel of the sun tracking system, Media Teknik, Edisi Mei 2008, accredited by Directorate of Higher Education, Department of National Education
- **Nazrul Effendy**, Singgih Hawibowo, Balza Achmad, Optimization on Artificial Neural Networks to Control "kartini" nuclear research reactor with linear reference model, Media Teknik, Edisi Februari 2001, accredited by Directorate of Higher Education, Department of National Education

#### **National Conference:**

- **Nazrul Effendy**, Faridah, I Nyoman Kusuma Wardana, and Teguh Iryanto, Identification System of Speech Intonations for the monitoring and controlling of electric equipment using neural networks, proceedings of the conference on application and research in industrial technology, August 2008, ISBN: 978-979-18528-0-7
- **Nazrul Effendy**, Rifqi Imanto, Ayodya P Tenggara, The detection of the pornography in digital images using Sobel detection method and LVQ neural networks, proceedings of the National Conference on the Information Technology Research (SRITI) 2008, ISSN 1907-3526
- **Nazrul Effendy**, Nandan Suterena, Marten Darmawan dan Bagus Utomo, Sistem kendali suspensi aktif mobil menggunakan neuro-fuzzy, proceedings National Conference on Teknologi Industri (SNTI) 2008, 23 Juli 2008, ISSN 978-979-18265-0-1
- I Nyoman Kusuma Wardana, Alfa Antariksa, **Nazrul Effendy**, A design of an expert system to diagnose the mouth and teeth diseases using Clips, proceedings of the national conference on the application of information technology (SNATI 2008), 21 Juni 2008, Yogyakarta, ISSN 1907-5022
- **Nazrul Effendy**, Subagja, dan Amir Faisal, prediksi penyakit jantung koroner (PJK) berdasarkan faktor risiko menggunakan jaringan syaraf tiruan backpropagation, proceedings of the national conference on the application of information technology (SNATI 2008), 21 Juni 2008, Yogyakarta, ISSN 1907-5022
- **Nazrul Effendy**, Adnan Syarafi Ashfahani, Arditya Yulinggar, dan I Nyoman Kusuma Wardana, aplikasi kontrol logika fuzzy pada sistem tracking matahari (sun tracking system) panel photovoltaic, proceedings of the national conference on the application of

information technology (SNATI 2008), 21 Juni 2008, Yogyakarta, ISSN 1907-5022

- **Nazrul Effendy**, M. Heikal Hasan dan Febry Wikatmono, The implementation of fuzzy logics to control the level and pH of water in a swimming pool, proceedings of the national conference on the application of information technology (SNATI 2008), 21 Juni 2008, Yogyakarta, ISSN 1907-5022
- **Nazrul Effendy**, Ridwan Herdiawan, Fikri Nur Muhammad dan I Nym Kusuma Wardana, A design of a control system of a microhydro power plant using a Fuzzy Logic Controller, Proceedings of National Seminar on Information Technology 2008, UPN veteran, Jogjakarta, 24 Mei 2008
- **Nazrul Effendy**, Febry Wikatmono, M. Haekal Hasan dan Nandan Suteressa, Implementasi dan Perancangan Sistem Pakar Untuk Diagnosa Penyakit Mata pada Manusia Berbasis Pemrograman Clips, Proceedings of National Seminar on Information Technology 2008, UPN veteran, Jogjakarta, Mei 2008
- **Nazrul Effendy**, Khoerul Anwar, Ananda Dwi Mahendra dan Beta M.G.S, Kontrol Gerakan Buka Tutup Pintu Untuk Akses Sistem Keamanan Menggunakan Pola Iris Mata Manusia, Proceedings of National Seminar on Information Technology 2008, UPN veteran, Jogjakarta, 24 Mei 2008
- **Nazrul Effendy**, Singgih I Kurniawan, Intan Putri K, dan Nor Agny S. Utami, Peredaman Osilasi Getaran Pada Suatu Sistem Dengan Pemodelan Pegas-Damper Menggunakan Kendali Logika Fuzzy, Proceedings of National Seminar on Information Technology 2008, UPN veteran, Jogjakarta, 24 Mei 2008
- **Nazrul Effendy**, Khoerul Anwar, Beni Adi Trisna, dan Ananda Dwi Mahendra, Implementasi “Jaringan Syaraf Tiruan” Untuk Mendeteksi Cacat Bentuk Sel Darah Manusia dengan Menggunakan Pengolahan Citra, proceedings of the Fourth Nasional Seminar on Technology, vol 8, UTY-Jogjakarta, 5 April 2008
- **Nazrul Effendy**, Rifqi Imanto, Aresdi Praha, dan I Nyoman Kusuma, Pengendalian Debit Air Sungai Berdasarkan Curah Hujan Dengan Neuro-Fuzzy, proceedings of the Fourth Nasional Seminar on Technology, vol 8, UTY-Jogjakarta, 5 April 2008
- **Nazrul Effendy**, Sasono Ardhi Widagdo, dan Mu’adz Mohamad, Pengenalan Sidik Jari Menggunakan Jaringan Saraf Tiruan Learning Vector Quantization, proceedings of the Fourth Nasional Seminar on Technology, vol 8, UTY-Jogjakarta, 5 April 2008
- **Effendy, N.**, Identifikasi Spektrum Frekuensi Isyarat Elektrokardiograf Menggunakan Jaringan Syaraf tiruan Kompetisi Penuh , Proceedings of National Conference on Kecerdasan Komputasional (SNIKTI ) III, 2002
- Nafisah, S., and **Effendy, N.**, Implementasi Sistem pakar dalam bidang farmakologi dan terapi sebagai pendukung pengambilan keputusan berbasis web, Proceedings of SNIKTI (National Conference on Kecerdasan Komputasional) II, 2001
- **Effendy, N.**, Setiawan, W., and Achmad, B., Implementation of Artificial Neural Networks on Frequency Spectrum Recognition, Proceedings of Seminar and Scientific Presentation of Basic Research in Nuclear Science and Technology, BATAN, 1998

**Computer Skills:**

- Linux, Cygwin, Windows
- Microsoft Office
- Matlab and Simulink
- C/C++, (Borland C++, Borland C++ Builder, Microsoft Visual C++)
- Visual Basic, Pascal/Delphi
- Lab View
- Web design

Yogyakarta, August 19, 2009

Ir. Nazrul Effendy, M.Eng., Ph.D.