

# CURRICULUM VITAE

Assoc. Prof. Dr. Nazrul Effendy



## 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:
    - English, Mathematics I, Mathematics II, Engineering Mathematics I, Engineering Mathematics II, Numerical Methods I, Numerical Methods II, Statistics, Basic Chemistry I, Basic Chemistry II, Basic Chemistry Laboratory I, Basic Chemistry Laboratory II, Atomic Physics, Basic Physics I, Basic Physics II, Basic Physics Laboratory, Chemical Engineering Principles, Radiochemistry, Radiation Chemistry, Heat and Mass Transfer, Physical Chemistry, Engineering Thermodynamics, Fluid Mechanics, Computer Programming, Engineering Drawings, Machine Element, Electrical Engineering, Electronics, Nuclear Electronics, Nuclear Electronic Laboratory, Control Engineering, Instrumentation Engineering, Instrumentation Laboratory, Instrumentation and Control Engineering, Servomechanism and Instrumentation, Power System Analysis, Power Generating Engineering, Robotic Systems, AC/DC Machine, Computer Interfacing Systems, Digital Signal Engineering, Signal Engineering, Nuclear Reactor Theory I, Nuclear Reactor Theory II, Nuclear Reactor Safety, Nuclear Reactor Dynamics, Radiation Protection, Radiation Detection and Measurement, Radiation Detection and Measurement Lab, Research Method, Material Science I, Material Science II, Pumps and Compressor, Steam Boiler and Turbine Machine, Field Study
  - Thesis: Implementation of Artificial Neural Networks to recognize the frequency spectrum
  - Advisors: Dr. Ir. Widi Setiawan and Ir. Balza Achmad, MSc.E.
- 1989-1992, Senior High School: SMUN 1 Dabosingkep, Riau, Indonesia
- 1986-1989, Junior High School: SMPN 2 Dabosingkep, Riau, Indonesia
- 1980-1986, Elementary School: SDN 016 Dabosingkep, Riau, Indonesia

**Other Course/ training:**

- Workshop on Developing education through research, facilitators: Ariel B. Lindner, Dusan Misevic, Antoine Decrulle, Stephane Douady, Luping Xu, Eva-Maria Schoetz (Center for researches and Interdisciplinary – Paris), held in Gadjah Mada University, Dec 20-23, 2011
- Energy for Sustainable Development in Asia, delivered by energy experts including Mr. Sivanappan Kumar (AIT), Ms. Christina Aristanti (Dian Desa, ENERGIA), Mr. V.K. Vijay (IIT), Mr. Bundit Funtamasan ( JGSEE), Mr. Tetsuo Tezuka (Kyoto U), Mr. Hideaki Ohgaki (Kyoto U), Mr. Keichi Ishihara (Kyoto U), Mr. Low Seow Chay (Nanyang Tech U), Mr. Yanjia Wang (Tsinghua U), Mr. P.Ravindra (U Malaysia Sabah) and Mr. Hubert Gijzen (UNESCO), Feb 10 – Apr 7, 2011 (supported by UNESCO)
- Renewable Energy Policy & Planning for Sustainable Development, delivered by energy experts including Mr. Sivanappan Kumar (AIT), Dr. Abdul Salam (AIT) and Dr. Charles Marpaung (AIT), Mar 10 - Apr 5, 2010 (supported by UNESCO)
- Multimedia Enhanced Instructions System for Technical Education and Training

(MEIST), Multimedia University, Malaysia, May 12 – May 27, 2007 (under the Malaysian Technical Cooperation Program (MTCP))

- Recent Advances in Ultrawide Bandwidth Communications and Networks, Prof. Dr. Moe Win, Laboratory for Information and Decision Systems (LIDS), Massachusetts Institute of Technology, <http://wgroups.lids.mit.edu/>, held in Chulalongkorn University, March 9, 2007.
- Technical/Professional Writing Course, International School of Engineering, Faculty of Engineering, Chulalongkorn University, August 15-October 10, 2006
- Parameter Estimation in Chemical Plant using Genetic Algorithm, Associate Prof Dr. Muhamed Azlan Hussain, University of Malaya, Email: mohd\_azlan@um.edu.my, held in Chulalongkorn University, September 8, 2004
- Advanced Process Dynamics and Control, Lecture and Computer Lab Using MATLAB and Simulink by Professor Sirish L. Shah (Author of Control Loop Performance Assessment: Theory and Application, <http://www.ualberta.ca/~slshah>, University of Alberta, Canada, Held in Chulalongkorn University, January 16-26, 2004.
- Laser Technology in Peace and War, 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
- 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**

- Staff Exchange Program, Instrumentation, Control and Embedded Systems (ICES) research group, School of Engineering and Digital Arts, Kent University, Erasmus Mundus Lotus Scholarship, Oct 22 – Nov 20, 2011
- Post Doc, Department of Control and Computer Engineering, Politecnico di Torino, Italy, Erasmus Mundus Scholarship, July 3, 2010-May 3, 2011 (10 months)
- 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:**

- Associate Professor, Engineering Physics Department, Faculty of Engineering, Gadjah Mada University, February 1, 2011 – present
  - Engineering Drawing
  - Artificial Intelligence (Artificial Neural Networks, Fuzzy Logic and Expert Systems)
  - Intelligent Control
  - Modern Control
  - Robotic System
  - Signal and Systems

- Assistant Professor, Engineering Physics Department, Faculty of Engineering, Gadjah Mada University, April 1, 2009 –January 31, 2011
  - Engineering Drawing (2009 – 2010)
  - Artificial Intelligence (Artificial Neural Networks, Fuzzy Logic and Expert Systems) (2009-2010)
  - Intelligent Control (2009-2010)
  - Modern Control (2009-2010)
  - Signal and Systems (2009-2010)
- Postdoctoral research fellow, Department of Control and Computer Engineering, Politecnico di Torino, Italy, July 3, 2010-May 3, 2011
- 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 – July 2010.
- Lecturer, Engineering Physics Department, Faculty of Engineering, Gadjah Mada University, 1998 –April 1, 2009
  - Engineering Drawing (2007 – 2009)
  - Artificial Intelligence (Artificial Neural Networks, Fuzzy Logic and Expert Systems) (2000, 2008-2009)
  - Intelligent Control (2008-2009)
  - Modern Control (2008-2009)
  - Signal and Systems (First semester 2000 – 2003, 2007-2009)
  - 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, Faculty of Engineering, 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 – July 2010.
- Chairman, Singkep Family Association Scholarship Committee, April 2007 – present.
- Chairman, Information and Communication Technology Team, Department of Engineering Physics, Faculty of Engineering, Gadjah Mada University, July 2007 – June 2010.
- Chairman, Procurement Team, Department of Engineering Physics, Faculty of Engineering, Gadjah Mada University, January 2008 – December 2009.
- Member, International Speech Communication Association (ISCA), July 2004 – 2007.
- Member, Indonesian Society for Soft-Computing, 2006 – present.
- 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
- Chairman, Singkep Family Association Scholarship Committee, 2002-2004, 2007-present
- Member, Singkep Family Association Scholarship Committee, 2005-2006
- 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:**

##### **Books:**

- Syifaun Nafisah and **Nazrul Effendy**, Computer Graphics using Borland C++ Builder Professional (Grafika Komputer dengan Borland C++ Builder Professional), in Indonesian, Graha Ilmu, Yogyakarta, 2010

##### **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:**

- Gustavo Belforte, Erik L. J. Bohez, **Nazrul Effendy**, 2011, Optimal identification of multidimensional polynomials describing systematic errors in CNC machines, proceedings of the 21st International Conference on Production Research, July 31 – August 4, 2011, Stuttgart, Germany
- **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**, Adnan Syarafi Ashfahani, Arditya Yulinggar, dan I Nyoman Kusuma Wardana, A fuzzy logic control application to the photovoltaic panels of sun tracking system, 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**, Singgih I Kurniawan, Intan Putri K, dan Nor Agny S. Utami, A vibration damping system with a Spring-Damper Model using Fuzzy Logic controller, Proceedings of National Seminar on Information Technology 2008, UPN veteran, Jogjakarta, 24 Mei 2008
- **Nazrul Effendy**, Rifqi Imanto, Aresdi Praha, dan I Nyoman Kusuma, The control of River water debit Based on Rainfall using Neuro-Fuzzy, proceedings of the Fourth Nasional Seminar on Technology, vol 8, UTY-Jogjakarta, 5 April 2008
- Nafisah, S., and **Effendy, N.**, The implementation of expert systems in the field of pharmacology and therapy as a web-based support decision making system, 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, January 19, 2012



Assoc. Prof. Dr. Nazrul Effendy