Dr. Said Benaissa

CONTACT INFORMATION

Hassan II University, Casablanca

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RESEARCH INTERESTS

Complex adaptive systems in control systems engineering and behavioral science: distributed algorithms, computational agent-based modeling, hybrid dynamic systems, decentralized decision making, emergence and self organization, amorphous computing, autonomous systems, control, communications, verification, cooperation, optimization, game theory, resource allocation, parallel computation, robotics, energy systems, sustainability in the built environment, behavioral ecology, engineering education, bio-mimicry and bio-inspiration

CURRENT ACADEMIC APPOINTMENTS

PhD in Computer Science, Hassan II University — December 2016 to present

PREVIOUS ACADEMIC APPOINTMENTS

Associate Research Scientist, Hassan II University — December 2016 to present
National High School of Electricity and Mechanics

- Affiliations:
  - Engineering Research Laboratory
- Laboratories:
  - System Architecture Team

EDUCATION

Ph.D.National High School of Electricity and Mechanics, Hassan II University, Casablanca. Computer Science Engineering, December 2016

- Thesis Topic: *Design and Development of a Mobile Robot Control Platform: Simultaneous Localization and Cartography*
- Thesis Proposal: *Cooperative Task Processing*
- Candidacy: *Research Problems in Distributed Control Systems*
- Adviser: Professor H.Medromi
- Area of Study: Control Engineering

M.S.Cadi Ayyad University - Faculty of Sciences and Technics. Networking and Telecommunications Engineering, August 2008

- Thesis Topic: *Evaluation of the performance of IP Networks: Study, Comparison and Simulation of the queue management algorithms* .
- Adviser: Professor N.Idboufker
- Area of Study: Control Engineering

B.S.Physics Engineering, June 2005, Faculty of Sciences, Cadi Ayyad University, Marrakesh.

SUBMITTED JOURNAL PUBLICATIONS

[1] Said Benaissa. Robotics Operating System: Mobile Robot Localization Methodology. *International Journal of Advanced Robotic Systems*, March 26 2017.

CONFERENCE PUBLICATIONS

[2] S.Benaissa, F.Moutaouakkil, S.Tallal, H.Medromi .Modelization and Implementation of EKF-Localization for Mobile Robot using ROS. In: *The 13th International Conference on Informatics in Control, Automation and Robotics, At Portugal, Lisbon. (ICINCO 13)*, July 29 – July 31 2016.
doi:10.13140/RG.2.1.4676.8880

[3] M.Salim Lmimouni, S.Benaissa, H.Medromi, A.Sayouti, Using an MPI Cluster in the Control of a Mobile Robots System by *International Journal of Advanced Computer Science & Applications (IJACSA 2014)*

[4] M. El Bakkali, S. Benaissa, S. Tallal, A. Sayouti, H. Medromi, "EAAS3" Distributed Control Architecture of MAS Robotic Systems. *International Review on Computers and Software (IRECOS 2013)*.

[5] S.Benaissa, M.El Bakkali and H.Medromi, Agent Communication protocols for Autonomous mobile robots. *International Journal on Communications Antenna and Propagation (IRECAP 2012)*.

[6] S.Benaissa, F. Moutaouakkil, H.Medromi, New Multi-Agent's Control Architecture for the Autonomous Mobile Robots. *International Review on Computers and Software (IRECOS 2011)*.

[7] S.Benaissa, S.Tallal and H.Medromi, Autonomous mobile robots *International Journal of Emerging Trends & Technology in Computer Science (IJETTCS 2012*.

PROFESSIONAL MEMBERSHIPS

Institute for Systems and Technologies of Information, Control and Communication (INSTICC), Member, 2016–present

APPLICATION AREAS

Autonomous and Unmanned Vehicles, Flexible Manufacturing Systems, Distributed Power Generation, Intelligent Lighting, Power Demand Response, Microgrids, Smart Grids

HARDWARE AND SOFTWARE SKILLS

Analog and Digital Electronics:

- Bipolar and FET implementations of continuous and switched amplifiers, modulators, converters, and filters
- Computer-Aided Design Tools: Cadence OrCAD, NI Multisim, SPICE, pst-circ

Embedded and Real-time Systems:

- Software and hardware development with several MCU and DSP platforms (e.g., Motorola MCU's, Texas Instruments DSP's, Atmel ATmega MCU's, Microchip PIC MCU's, and others)

Instrumentation, Control, Data Acquisition, Test, and Measurement:

- dSPACE hardware (e.g., RTI1104) and Control Desk software, Simulink, LabVIEW and other National Instruments control and data acquisition hardware and software (e.g., MIO, SMIO, DSA, DMM, and others), Hewlett-Packard and Agilent bench-top equipment

Computer Programming:

- Swift, C, C++, Java, JavaScript, NetLogo, Pascal, Perl, PHP, Lisp, UNIX shell scripting (including POSIX.2), GNU make, AppleScript, SQL, MySQL, and others

Numerical Analysis:

- MATLAB, R, Maple, Mathematica

Version Control and Software Configuration Management:
- DVCS (Mercurial/MQ, Git/StGit), VCS (RCS, CVS, SVN, SCCS), and others

MATLAB skill set:
- Linear algebra, Fourier transforms, Monte Carlo analysis, nonlinear numerical methods, polynomials, statistics, N-dimensional filters, visualization
- Toolboxes: communications, control system, filter design, genetic algorithm and direct search, signal processing, system identification

Software Verification:
- KeY, PRISM, KeYmaera

Information/Internet Technology:
- Networking (UDP, TCP, ARP, DNS, Dynamic routing), Services (Apache, SQL, MediaWiki, POP, IMAP, SMTP, application-specific daemon design)

Desktop Editing and Productivity Software:
- Vim, Emacs, Eclipse, Xcode
- TEX (LATEX, BIBTEX, PSTricks),
- Microsoft Office, OpenOffice.org, LibreOffice, Corel WordPerfect, Google Docs
- GIMP, InkScape

Operating Systems:
- Microsoft Windows family, Apple OS X, IBM OS/2, Linux, BSD, IRIX, AIX, Solaris, and other UNIX variants

EXPERTISE

Mathematics:
- Applied Mathematics, Real and Complex Analysis, Measure Theory, Differential Geometry, Game Theory, Graph Theory, Combinatorics

Control Theory and Engineering:
- Linear and Nonlinear Systems Theory, Feedback, Variable Structure Systems and Sliding Modes, Distributed and Intelligent Control, Dynamic Optimization, Biomimicry, Bioinspiration, Hybrid and CyberPhysical Systems

Communications and Signal Processing:
- Probability, Random Variables, Stochastic Processes, Information Theory, Estimation, Networks

Computer Science and Engineering:
- Model Checking (automated, distributed, hybrid, probabilistic), Hybrid Automata, Software Verification, Component-Based Reusable Software

Natural and Social Sciences (Biology, Neuroscience, Psychology, Anthropology):
- Behavioral Ecology, Foraging Theory, Altruism, Impulsiveness, Evolution

MORE INFORMATION

More information and auxiliary documents can be found at http://saidbenaissa.netai.net.