Attila Kis

PROFESSIONAL OBJECTIVE:

A challenging professional opportunity in electronic technology where extensive experience and acquired expertise as well as unique skills and well developed personal attributes can be utilized.

SUMMARY OF QUALIFICATIONS:

Over 4 years of experience in teaching undergraduate classes, mentoring undergraduate students in their Master's Thesis.

Special skills: computer programming (VC++, Borland C++, Delphi), VLSI Design, Cadence Design Systems, Magic VLSI Layout Tool, Orcad Capture and Layout, PSpice, VHDL, ModelSim etc.

Holds a Ph.D. in Neuromorphic Information Technology, Master's Degree in Electronic Engineering.

Author of 7 technical publications and presentations. IEEE Student Member.

Multi-lingual. Fluent in Hungarian (native), English, Romanian. Language skills acquired while studying and living in Europe.

PROFESSIONAL EXPERIENCE AND ACCOMPLISHMENTS:

2002 to present **Peter Pazmany Catholic University, Anyos Jedlik Laboratories Budapest, Hungary**

Graduate student.

- Designed an experimental tactile system, capable to sense and process the tactile sensory information.
- Tutored a team of four undergraduate-graduate students.
- Developed intelligent algorithms to control a robot arm in a proactive-adaptive way.
- As part of a MEMS design team, designed an array of single crystalline force sensor elements capable to resolve the 3D components of the load, with a porous Si micromachining technique.

2001 to 2002 **Computer and Automation Research Institute, Hungarian Academy of Sciences - Analogical and Neural Computing Systems Laboratory**

- Designed emulated digital CNN-UM (CASTLE) arithmetic cores, full custom VLSI circuit.
- VHDL simulation of the arithmetic cores.

PUBLICATIONS & PRESENTATIONS:

1) Attila Kis, Ferenc Kovács & Péter Szolgay: "3D Tactile Sensor Array Processed by CNN-UM: A Fast Method for Detecting and Identifying Slippage and Twisting Motion", *Accepted to International Journal on Circuit Theory and Application (CTA), special issue on CNN*, 2006

2) Gábor Vásárhelyi, Mária Ádám, Éva Vázsonyi, Zsolt Vízváry, Attila Kis, István Bársony & Csaba Dücső "Characterization of an Integrable Single - Crystalline 3D Tactile Sensor", *Accepted to IEEE Sensors Journal*, 2006
3) Attila Kis, Ferenc Kovács & Péter Szolgay: "Hardware and Software Environment for a Tactile Sensor Array", *Eurosensors XIX, Barcelona September*, 2005
4) Attila Kis, Ferenc Kovács & Péter Szolgay: "Analogic CNN Algorithms for Textile Quality Control Based on Optical and Tactile Sensory Inputs ", *Budapest July, CNNA*, 2004
5) Attila Kis, Nicholas Bottka, Ferenc Kovács & Péter Szolgay: "Elementary CNN Algorithms and an Experimental System for Typical Tactile Actions", *IEEE European Conference on Circuit Theory and Design ECCTD03, Krakow September*, 2003
6) Attila Kis, Gábor Vásárhelyi, Antalné Ádám, Péter Szolgay: "Tactile sensing: sensors and algorithms", *Hungarian Neuroscientists Society MITT05*, Hungary, Pécs January, 2005; pp. 129
7) Bársony István, Dücső Csaba, Kis Attila, Négyessy László, Kovács Ferenc, Szolgay Péter: "Tactile sensing, sensors and processors", *Presentation of The Hungarian Infobionic Research Center, Hungarian Academy of Science,* Budapest, May 2005

PROFESSIONAL AFFILIATION AND AWARDS:

2000 National Conference of Scientific Students' Associations Romania, Best Paper Award

EDUCATION:

2002 to present

Ph. D. in Neuromorphic Information Technology from the Peter Pazmany Catholic University, 2006

Sensing, Computing, Telepresence and Understanding. Analogic sensor-computer arrays in nonlinear three-dimensional dynamic problems, neuromorphic applications (Prof. Tamás Roska, Prof. József Hámori)

The main themes of research are analog-and-logic (also called analogic) cellular wave computers and their applications, research on processor arrays in general and their interaction with living organisms. In this program, processor solutions based on sensor technologies, MEMS devices, sensory computers and multi-modal sensing play a substantial role. This program covers the areas of bionic devices, info-bionic and neuromorphic information technology. The main areas of research are:

- Subcortical modeling of the vision system and cortical feedback
- Cortical relations in the vision system ("the multiscreen theatre")
- Somatosensoric sensing and intermodal plasiticity
- Implementation of the above models on analogic cellular ("CNN-UM") processors
- Two and three-dimensional dynamic waves and their algorithmic application
- Image processing in a neuromorphic way, analysis of shape, color, depth and motion
- Emergent computations

- Design of analogic sensor-computers and their application.

The main idea of interdisciplinarity in this program lies in the personal interaction of researchers of various fields of expertise, including departments and academic research units in Hungary and abroad (Berkeley, Leuven, Sevilla, Notre Dame etc.).

1996 to 2001 **"Petru Maior" University**
Targu Mures, Romania

Electrical Engineering department.
Master Degree in Automatics and Industrial Information Technology.

1991 to 1996 **"Bolyai Farkas" High School**
Targu Mures, Romania

Intensive Mathematics and Physics.

Additional Courses, and Stages

- 2005 September - Mentor Graphics - Analogue IC Design Seminar
- 2001 September - Mentor Graphics – FPGA Advantage Seminar