

Curriculum Vitae of Alfredo Ruggeri



Born in Vicenza (Italy) on 12 May 1955

Education

University of Padua, Padua, Italy - Laurea Degree in Electronic Engineering, Feb 1979

Employment / Experience

- 1992 - **Associate Professor** of Biomedical Engineering, Department of Information Engineering, University of Padua, Padua, Italy
- 1994 - 2002 **Visiting Professor**, Department of Bioengineering, University of Washington, Seattle (WA), USA (summer)
- 1982 **Visiting Scholar**, Biocybernetics Laboratory, Departments of Computer Science and Medicine, University of California, Los Angeles (CA), USA (3 months)
- 1981 - 1992 **Assistant Professor** of Biomedical Engineering, Department of Electronics and Informatics, University of Padua, Padua, Italy
- 1979 - 1981 **Lecturer** of Biomedical Engineering, Department of Electronics and Informatics, University of Padua, Padua, Italy

Honors

- Italian National Research Council: Postdoctoral International Fellowship (1979)
- Italian National Research Council: International Exchange Fellowship (1996, 1997)

Professional Societies

- IEEE Engineering in Medicine and Biology Society (EMBS)
- Association for Research in Vision and Ophthalmology (ARVO)
- European Association for Vision and Eye Research (EVER)
- European Eye Bank Association (EEBA)

Main consultancy experiences

- M31, Padua (Italy), from 2006. Private incubator: co-founder and member of the Board of Directors.
- CenterVue, Padua (Italy), from 2011
- Telea Electronic Engineering, Vicenza (Italy), from 2006
- Nidek Technologies, Padua (Italy), 1998-2009
- Tesi Imaging, Milan (Italy), 2006-7
- DIDECO, Modena (Italy), 1999-2000
- FIDIA Pharmaceuticals, Abano Terme (Italy), 1993-5

Teaching Activities

- “Biomedical Technology and Instrumentation,” Bachelor Degree in Biomedical Engineering, University of Padua.
- “Biomedical Instrumentation,” Master Degree in Bioengineering, University of Padua.
- “Modeling of Physiological Systems,” ERASMUS European Post-graduate Course in Biomedical Engineering, University of Patras (Greece), 1990-2004.
- Faculty member of the PhD Curriculum in Bioengineering, University of Padua.
- Partner of the REVAMMAD project (REtinal Vascular Modelling, Measurement and Diagnosis), European Union’s 7th Framework (FP7) Marie Curie Initial Training Network program.
- ERASMUS+ program: coordinator of 11 exchanges with UK, Sweden, Denmark, Germany, Spain, Portugal, Poland.
- Director of International Activities of the Department of Information Engineering (ERASMUS+, University of California, Boston University).

Research Activities

Past:

Modeling of metabolic and endocrine systems, with emphasis on the use of simulation, system identification techniques and optimal experiment design. Application of modeling, expert systems and neural networks techniques in the fields of diabetes, laboratory medicine and nephrology.

Current:

Computer image processing and analysis in diagnostic ophthalmology (retinal images): image pre-processing and restoration; image mosaicking; retinal vessels identification and analysis; non-vessel lesions identification and analysis; image registration. Design of adaptive optics fundus camera. Development of computer tools for the clinical assessment of retinopathies.

Computer image processing and analysis in diagnostic ophthalmology (corneal images): corneal confocal microscopy image pre-processing and restoration; corneal layer image classification; image mosaicking; endothelium cell contour detection and morphology analysis; corneal nerve detection; epithelium cell density estimation.

Computer image processing and analysis in cytology: segmentation and classification of chromosomes in metaphase images.

Publications

Over 120 papers in peer-reviewed international journals, books and conference proceedings.

Organizer of sessions on image analysis in ophthalmology at IEEE-EMBS conferences.

Main scientific collaborations

Veneto Eye Bank Foundation, Venice, Italy.

Clinic of Ophthalmology at Charité University School of Medicine, Berlin, Germany.

School of Computing, University of Dundee, Dundee, UK.

Engineering and Physics Sciences School, Heriot-Watt University, Edinburgh, UK.

Moorfields Eye Hospital, London, UK.

Department of Clinical and Experimental Medicine, Linköping University, Sweden.

The Children's Hospital Of Philadelphia, Philadelphia, PA (USA).

Scheie Eye Institute, University of Pennsylvania, Philadelphia, PA (USA).

Casey Eye Institute, Oregon Health & Science University, Portland, OR (USA).

Department of Ophthalmology, Mayo Clinic College of Medicine, Rochester, MN (USA).

Department of Ophthalmology and Visual Sciences, University of Wisconsin, Madison, WI (USA).

School of Optometry, University of Waterloo, Waterloo, ON, Canada.

Department of Ophthalmology, Ehime, University School of Medicine, Ehime, Japan.

Journal Reviewer

IEEE Transaction on Medical Imaging, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Information Technology in Biomedicine, Medical Image Analysis, Artificial Intelligence in Medicine, Annals of Biomedical Engineering, Journal of Electronic Imaging, Medical and Biological Engineering and Computing, Computer Programs and Methods in Biomedicine, Medical Engineering and Physics; Investigative Ophthalmology and Visual Science, British Journal of Ophthalmology, European Journal of Ophthalmology, International Ophthalmology, BioTechniques, Vision Research.