Marwan Abdellah

Résumé

EXPERIENCE & EMPLOYMENT HISTORY

07.2011 – Present	*Scientific Visualization Engineer · Blue Brain Project · EPFL · Lausanne · Switzerland*
01.2013 – 10.2013	*Software Engineer · Coursera EPFL · Lausanne · Switzerland*
07.2010 – 04.2011	*Research Assistant · SCI-STI-MM Multimedia Group · EPFL · Lausanne · Switzerland*
03.2010 – 07.2010	*Biomedical Software Engineer · Biomedical Group · Symbyo Technologies (360imaging) · Cairo · Egypt*
07.2009 – 07.2010	*Instructor · National Institute of Laser Advanced Sciences (NILES) · Cairo University · Cairo · Egypt*
09.2009 – 02.2010	*Biomedical Software Engineer · International Biomedical Engineering (IBE) Technologies · Cairo · Egypt*

EDUCATION

09.2012 — 09.2017	*Ph.D. In Silico Neuroscience · Blue Brain Project · EPFL · Lausanne · Switzerland*
09.2009 — 05.2012	*M.Sc. Biomedical Engineering · Biomedical Engineering Department · Cairo University · Cairo · Egypt*
09.2004 — 05.2009	*B.Sc. Biomedical Engineering · Biomedical Engineering Department · Cairo University · Cairo · Egypt*

RESEARCH & DEVELOPMENT INTERESTS

Visualization	*Scientific visualization · High performance, distributed, and scalable volume rendering · Transfer function design*
Medical Imaging	*High quality and high performance 3D/4D real-time volume reconstruction for medical data (CT, MRI and Ultrasound) · Digitally reconstructed radiograph generation with k-space volume rendering*
Rendering	*Physically-based Monte Carlo rendering · Rendering fluorescence materials with low- and highly-scattering heterogeneous media*
HPC	*GPU computing (GPGPU) with CUDA · Heterogeneous computing with OpenCL · Parallel and distributed computing with OpenMP and sockets*
Computational Geometry	*Reconstruction of high fidelity polygonal meshes that can accurately represent the surface of neuronal morphologies extracted from optical microscopy stacks*
In Silico Neuroscience	*Physically-plausible simulation of different microscopic imaging techniques of the cortical brain tissue using digital reconstructions of 3D neuronal models including brightfield, fluorescence and light sheet microscopes*

TECHNICAL

Programming	*C/C++ · Python · Java · Unix Shell · OOP · Design Patterns · TDD*
Libraries	*STL · Boost · Qt*
Visualization & CG	*OpenGL · Open Inventor · OpenSceneGraph · VTK · XIP · NVIDIA Cg · GLSL*
Rendering	*PBRT · LuxRender · Mitsuba*
HPC	*CUDA · OpenCL · OpenMP · SLURM*
Web Development	*HTML · CSS · JavaScript*
Software Process	*Agile · Scrum · Bamboo · Jira · Jenkins*
Scientific Packages	*MATLAB · Octave · Vensim*
3D Graphics	*Blender (scripting with Python) · Maya (including MEL scripting) · 3DSMax*
Design & Web	*Gimp · Adobe Photoshop · Adobe Illustrator · Adobe After Effects · Adobe Muse*
Typography	*LaTeX· Lyx · Microsoft Office*
Others	*Git · SVN · Doxygen*

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SELECTED PROJECTS

2016 – Present	*Large scale physically-plausible reconstruction of volumetric models of neuronal morphologies*
2015 – 2016	*Parallel rendering of large scale volumes on distributed heterogeneous computing platforms*
2015 – 2016	*Physically-based rendering of highly scattering fluorescent brain models*
2013 – Present	*Simulation of optical microscopy with Monte Carlo rendering*

OPEN SOURCE CONTRIBUTIONS

2016 – Present	*NeuroMorphoVis*
2015 – 2016	*Livre*
2011 – 2015	*The Neocortical Microcircuit Collaboration Portal*
2011 – 2012	*Equalizer*
2012	*The Portable Hardware Locality (HWLOC)*

HONORS & AWARDS

October 2017	*EPFL Prime Speciale · 1000.0 CHF*
January 2010	*ITIDA Graduation Project Award*
June 2010	*NVIDIA Award · ICTP*
July 2009	*Distinction with Honor · B.Sc. Biomedical Engineering*

GRANTS & FELLOWSHIPS

June 2018	*ISMB Fellowship · USD 1000*
September 2012	*EPFL Ph.D. Fellowship*
January 2011	*ICTP Grant*
August 2009	*ICTP Grant*
January 2009	*ITIDA/ITAC Grant · USD 2000*

PROFESSIONAL MEMBERSHIPS

01.2010 – Present	*Institute of Electrical and Electronic Engineers (IEEE)*
01.2010 – Present	*IEEE Engineering in Medicine and Biology Society (EMBS)*
02.2015 – Present	*IEEE Engineering Computer Society*
04.2015 – Present	*The European Association of Computer Graphics (Eurographics)*
05.2015 – Present	*International Society for Computational Biology (ISCB)*

PERSONAL

Residence	PERMIT B · *Lausanne · Switzerland (since 2010)*
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Emails	*abdellah.marwan@gmail.com · marwan.m.abdellah@ieee.org · marwan.abdellah@epfl.ch*
Languages	ENGLISH — *Fluent* · FRENCH — *Good* · ARABIC — *Mothertongue*
Publications	*All the publications are listed in the attached curriculum vitae.*
Recommendations	*References are available upon request.*

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