Curriculum Vitae

Mélina Skouras

Researcher
Inria Grenoble Rhône-Alpes
655 avenue de l'Europe, Montbonnot, 38 334 Montbonnot Cedex, France
melina.skouras@inria.fr
http://imagine.inrialpes.fr/people/mskouras/index.htm

Education

Sept. 24, 2014	Ph.D. ETH Zurich, Switzerland.
Jan. 2010 – Sept. 2014	Ph.D. studies at the Computer Graphics Laboratory of ETH Zurich, Switzerland. Dissertation: Computational Design and Fabrication of Deformable Objects. Adviser : Prof. Markus Gross.
Sept. 2004	Diplôme d'Ingénieur (Master's Degree), ENSIMAG, Grenoble, France. Option: Images & Virtual Reality.
Sept. 2003 – Apr. 2004	Visiting student at the University of Waterloo, Ontario, Canada. Courses in Software Engineering, Computer Graphics, Image Processing and Computer Vision.
Sept. 2001 – Apr. 2004	Studies at ENSIMAG (National Graduate Engineering School of Computer Science and Applied Mathematics), INPG, Grenoble, France. Options in Geometric Modeling, Image Processing, User Interface.
Sept. 1999 – Apr. 2001	CPGE (Preparatory cycle to graduate engineering schools), MPSI-PSI*, Lycée Saint Louis, Paris, France.
June 1999	Baccalauréat, major in Mathematics, graduated with first class honours (Mention Trés Bien), Lycée Michelet, Vanves, France.

Employment

Since Dec. 2017	Researcher at Inria Grenoble Rhône-Alpes, Montbonnot, France.
Mar. 2015 – Oct. 2017	Postdoctoral associate at the Massachusetts Institute of Technology, Cambridge, USA.
Jan. 2010 – Jan. 2015	Research assistant at ETH Zurich, Zurich, Switzerland.
Jan. 2005 – Dec. 2009	Software developer at Dassault Systèmes, CATIA Geometric Modeler Team, Vélizy, France.

Apr. 2004 – Sept. 2004	Internship at THALES Training & Simulation, Visual Technologies Team, Cergy-Pontoise, France.
July 2003 – Aug. 2003	Internship at LMC-Imag (Laboratoire de Modélisation et Calcul, now part of Laboratoire Jean Kuntzmann) Grenoble, France.

Teaching & Supervision

Lectures

Computer Graphics II, Fall 2022, Master MoSIG, ENSIMAG, Co-Instructor (with Nicolas Holzschuch).

Computer Graphics II, Fall 2021, Master MoSIG, ENSIMAG, Co-Instructor (with Nicolas Holzschuch and Georges-Pierre Bonneau).

Surface modeling, Fall 2021, ENSIMAG, Co-instructor (with Stefanie Hahmann).

Numerical mechanics, Fall 2020, ENS de Lyon, Co-instructor (with Florence Bertails-Descoubes).

Surface modeling, Fall 2020, ENSIMAG, Co-instructor (with Stefanie Hahmann).

Numerical mechanics, Fall 2019, ENS de Lyon, Co-instructor (with Florence Bertails-Descoubes).

Surface modeling, Fall 2019, ENSIMAG, Co-instructor (with Stefanie Hahmann).

Surface modeling, Fall 2018, ENSIMAG, Co-instructor (with Stefanie Hahmann).

Computational Fabrication, Spring 2016, MIT, Two lectures.

Teaching Assistant

Mathematical Foundations of Computer Graphics and Vision, Spring 2013, ETHZ.

Visual Computing, Fall 2012, ETHZ.

Mathematical Foundations of Computer Graphics and Vision, Spring 2012, ETHZ.

Seminar "Advanced Methods in Computer Graphics and Vision", Fall 2011, ETHZ.

Surface Representations and Geometric Modeling, Spring 2011, ETHZ.

Informatik I, Fall 2010, ETHZ.

Surface Representations and Geometric Modeling, Spring 2010, ETHZ.

PhD Students

Siuyan He (co-supervised with Arthur Lebée), since October 2022.

Alexandre Teixeira da silva (co-supervised with Florence Descoubes and Thibaut Métivet), since February 2021.

Manon Vialle (co-supervised with Rémi Ronfard), since October 2020.

Emmanuel Rodriguez (co-supervised with Georges-Pierre Bonneau and Stefanie Hahmann), since October 2020.

David Jourdan (co-supervised with Adrien Bousseau), 2018 – 2022.

Mickaël Ly (co-supervised with Florence Descoubes), 2017 – 2021.

Students advised/co-advised on research projects

Emmanuel Rodriguez, *Direct and Inverse modelling of Laser-Cut Metamaterials*, 2020.

Louis Guillet, *Numerical modelling of knitted textiles*, 2019.

Marion Taconné, *Extensions to the aeroMorph Project*, 2019.

Shalu Dwivedi, *Simulation of Laser-Cut Metamaterials*, 2019.

Mélanie Carrière, *3D Design of Ancient Garments*, 2019.

Manon Vialle, *Etude de différentes normes pour les problèmes de modélisation inverse*, 2019.

Nathan Shourick, *Existence de solutions à des problèmes inverses de design*, 2019.

David Jourdan, *Optimizing Support Structures for Tensile Architecture*, 2018.

Jared Count, *Programmable Particles*, 2016.

Tao Du, *Soft Biped Walkers*, 2016.

Jifei Ou, *Heat-sealed Shape-changing Materials for Interaction Design*, 2015.

Noah Duncan, *Additive Manufacturing of Textiles with Customized Stretching Capabilities*, 2015.

Gaurav Bharaj, *Optimization of Deformable Flippers*, 2015.

Akash Garg, *Design of Panel-Based Inflatables*, 2013-2014.

Scientific Publications

C. Boutemy, A. Lebée, M. Skouras, M. Mimram and O. Baverel. Reusable Inflatable Formwork for Complex Shape Concrete Shells, *Design Modelling Symposium Berlin*, 198–210, 2022.

D. Jourdan, V. Romero, E. Vouga, A. Bousseau and M. Skouras. Simulation of printed-on-fabric assemblies, *ACM Symposium on Computational Fabrication*, no.6, 2022.

M. Vialle, S.F. Alaoui, M. Skouras, V. Vilvanathan, E. Schwartz and R. Ronfard. Visualizing Isadora Duncan's movements qualities, *Creativity and Cognition*, 196–207, 2022.

E. Rodriguez, G.-P. Bonneau, S. Hahmann and M. Skouras. Computational Design of Laser-Cut Bending-Active Structures, *Computer-Aided Design (Proceedings of SPM)*, vol.1 (103335), 2022.

D. Jourdan, M. Skouras, E. Vouga and A. Bousseau. Computational Design of Self-Actuated Surfaces by Printing Plastic Ribbons on Stretched Fabric, *Computer Graphics Forum (Proceedings of Eurographics)*, vol. 41 no.2, 2022.

Z. Chen, H.-Y. Chen, D. Kaufman, M. Skouras and E. Vouga. Fine Wrinkling on Coarsely Meshed Thin Shells, *ACM Transactions on Graphics*, vol. 40, no. 5, 2021.

D. Jourdan, M. Skouras, E. Vouga and A. Bousseau. Printing-on-Fabric Meta-Material for Self-Shaping Architectural Models, *Advances in Architectural Geometry*, 2020.

M. CARRIÈRE, M. SKOURAS and S. HAHMANN. 3D Design Of Ancient Garments, *GCH 2019 - EUROGRAPHICS Workshop on Graphics and Cultural Heritage*, 2019.

J. MARTÍNEZ, M. SKOURAS, C. SCHUMACHER, S. HORNUS, S. LEFEBVRE and B. THOMASZEWSKI. Star-Shaped Metrics for Mechanical Metamaterial Design, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, vol. 38, no. 4, 82:1–82:13, 2019.

X. ZHANG, G.FANG, M.SKOURAS, G.GIESELER, C.C.L. WANG and E. WHITING. Computational Design of Fabric Formwork, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, vol. 38, no. 4, 109:1–109:13, 2019.

S. SUNDARAM, M. SKOURAS, D.S. KIM, L. VAN DEN HEUVEL and W. MATUSIK. Topology Optimization and 3D Printing of Multimaterial Magnetic Actuators and Displays, *Science advances*, vol. 5, no.7, eaaw1160, 2019.

M. LY, R. CASATI, F. BERTAILS-DESCOUBES, M. SKOURAS and L. BOISSIEUX. Inverse Elastic Shell Design with Contact and Friction, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia)*, vol. 37, no 6, 201:1–201:16, 2018.

D. CHEN, M. SKOURAS, B. ZHU and W. MATUSIK. Computational Discovery of Extremal Microstructure Families, *Science Advances*, vol. 4, no. 1, eaao7005, 2018.

B. ZHU, M. SKOURAS, D. CHEN and W. MATUSIK. Two-Scale Topology Optimization with Microstructures, *ACM Transactions on Graphics*, vol. 36, no. 4, 2017.

J. OU, M. SKOURAS, N. VLAVIANOS, F. HEIBECK, C.-Y. CHENG, J. PETERS and H. ISHII. aeroMorph – Heat-sealing Inflatable Shape-change Materials for Interaction Design, *Proceedings of ACM UIST*, 121–132, 2016.

M. SKOURAS, S. COROS, E. GRINSPUN and B. THOMASZEWSKI. Interactive Surface Design with Interlocking Elements, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia)*, vol. 34, no. 6, 224:1–224:7, 2015.

M. SKOURAS, B. THOMASZEWSKI, B. BICKEL, P. KAUFMANN, A. GARG, E. GRINSPUN and M. GROSS. Designing Inflatable Structures, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, vol. 33, no. 4, 63:1–63:10, 2014.

M. SKOURAS, B. THOMASZEWSKI, S. COROS, B. BICKEL and M. GROSS. Computational Design of Actuated Deformable Characters, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, vol. 32, no. 4, 82:1–82:10, 2013.

B. BICKEL, P. KAUFMANN, M. SKOURAS, B. THOMASZEWSKI, D. BRADLEY, T. BEELER, P. JACKSON, S. MARSCHNER, W. MATUSIK and M. GROSS. Physical Face Cloning, *ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH)*, vol. 31, no. 4, 118:1–118:10, 2012.

M. SKOURAS, B. THOMASZEWSKI, B. BICKEL and M. GROSS. Computational Design of Rubber Balloons, *Computer Graphics Forum (Proceedings of Eurographics)*, vol. 31, no. 2, 835–844, 2012.

Patents

W. MATUSIK, D. CHEN, M. SKOURAS and B. ZHU. Topology optimization with microstructures, *U.S. Patent US 20140316748 A1*, filed Jan. 27, 2017.

B. BICKEL, M. SKOURAS, B. THOMASZEWSKI, S. COROS and M. GROSS. Posture Guided Design of Deformable Objects , *U.S. Patent US 20140316748 A1*, filed Sept. 11, 2013.

B. BICKEL, B. THOMASZEWSKI and M. SKOURAS. Computational Design of Inflatable Deformable balloons , *U.S. Patent US 9056404 B2*, filed March 28, 2012.

Awards

SMI Young researcher award received in 2021.

Eurographics French Chapter Young Researcher Fellow in 2020.

Elected Eurographics Junior Fellow in May 2019.

Best Paper Award awarded to *Computational Design of Laser-Cut Bending-Active Structures* [Rodriguez et al. 2022].

Honorable Mention awarded to *aeroMorph – Heat-sealing Inflatable Shape-change Materials for Interaction Design* [Ou et al. 2016].

Funding

PI and Coordinator of the ANR AAPG PRC project *MatAIRialS: Architectured Inflatable mateRials for designing functional Shells*, 2023-2027.

Recipient of an IDEX-IRS funding (call 2018) from Université Grenoble-Alpes for the project *MetaMod: META-Matériau et MODélisation inverse de structures élancées*, funds covering 2018-2019.

Seminar Organizer

Graphyz 2 Workshop (The first Physics-Graphics Workshop, 2nd Edition), Oct. 16-19 2022, Co-organizer.

MePhy Seminar: From Computational Fabrication to Material Design, June 22, 2021, Co-organizer.

First French HCI - CG - VR Seminar, theme of the day: tangible artifacts, June 7, 2021, Co-organizer.

External Talks

Graphyz Workshop, Keynote, Oct 22, 2022.

Curves and Surfaces 2022: Mini-symposium on Interactive Simulation, Invited talk, 18 oct. 2022.

Shape Modeling International (SMI 2021), Keynote, Nov 15, 2021.

MePhy Seminar, Keynote, June 22, 2021.

Toronto Geometry Colloquium, April 28, 2021.

MePhy Workshp Elasticity + Geometry, March 24, 2021.

Ecole des Ponts, hosted by Oliver Baverel, Jan. 28, 2020.

EDP-CVGI Seminar, Saint-Martin-d'Hères, hosted by Charles Dapogny, Nov. 14, 2019.

ENS de Lyon, computer science department, hosted by Damien Stehlé, Nov. 12, 2019.

SCA 2019: Symposium on Computer Animation, Los Angeles, Invited talk, July 28, 2019.

IIHM Seminar, Saint-Martin-d'Hères, hosted by Céline Coutrix, April 18, 2019.

MORPHEO Seminar, Echirolles, hosted by Edmond Boyer, Nov. 27, 2018.

Boston University, hosted by Emily Whiting, Oct. 25, 2017.

Adobe Research, Seattle, hosted by Danny Kaufman, Nathan Carr, March 27, 2017.

Inria Nancy, hosted by Sylvain Lefebvre, March 8, 2017.

Inria Sophia Antipolis, hosted by George Drettakis, Dec. 21, 2015.

Inria Rhône-Alpes, hosted by Marie-Paule Cani, June 5, 2014.

Workshop Invitations

Bellairs Workshop on Computer Animation, Feb. 2020.

CECAM Lorentz Workshop: Computing Complex Mechanical Systems, Jan 2020.

Dagstuhl Seminar, Computational Aspects on Fabrication, Oct. 2018.

Fields Workshop on Robust Geometric Algorithms for Computational Fabrication, Apr. 2018.

Bellairs Workshop on Computer Animation: Simulation and learning from the living world, Feb. 2018.

Bellairs Workshop on Computer Animation: Simulation, Digital Fabrication and Robotics, Feb. 2016.

Dagstuhl Seminar, Computational Aspects on Fabrication, Sept. 2014.

Service Activities

Chair

Eurographics Short Papers Co-Chair 2023.

ACM SIGGRAPH Posters Chair 2021.

SMI FASE Technical Papers Co-Chair 2020.

ACM SIGGRAPH Student Research Competition Chair 2020.

ACM/Eurographics SCA Posters Chair 2018.

Program Committee Member

ACM SIGGRAPH Technical Papers Committee 2017, 2020, 2021, 2023.

ACM SIGGRAPH ASIA Technical Papers Committee 2019.

Eurographics International Program Committee 2018, 2019, 2021, 2022.

Advances in Architectural Geometry Papers Committee 2018, 2020.

ACM/Eurographics SCA Program Committee 2015, 2016, 2017, 2018, 2020.

Shape Modeling International Program Committee 2018, 2019, 2020, 2021.

Pacific Graphics Program Committee 2020, 2021.

Eurographics State-of-The-Art Reports International Program Committee 2023.

Eurographics Short Papers International Program Committee 2015.

GraDiFab International Program Committee 2016.

Reviewer

ACM SIGGRAPH 2015, 2016, 2017, 2019, 2022, ACM SIGGRAPH Asia 2014, 2016, 2018, 2020, 2021, ACM Transaction on Graphics 2016, 2018, 2019, 2020, 2021, Eurographics 2015, 2016, Computer Graphics Forum 2015, 2019, Pacific Graphics 2015, Computer & Graphics 2014, 2021, Computer Graphics International 2013, Graphical Models 2016, SCA 2012, CG/SPM 2011, Int. J. Numer. Meth. Engng 2019, Computer-aided design 2020, PNAS 2020, UIST 2020, SN Applied Science 2020, ACM CHI 2021, Quebec - FRQNT Grant program 2021.

PhD committees (as an examiner)

Paul Lacorre, Nantes Université, Dec. 22, 2022.

Tian Gao, Sorbonne Université, Nov. 8, 2022.

Tristan Djourachkovitch, Telecom Paris, March 10, 2020.

Thibault Lescoat, Insa Lyon, Sept. 28, 2020.