CURRICULUM VITAE

Mark H. Overmars

June 22, 2010

Personal facts:

Prof.dr. Mark H. Overmars
Department of Computer Science, Utrecht University
Padualaan 14, P.O. Box 80.089
3508 TB Utrecht, the Netherlands

Born: 29 September 1958 in Zeist (the Netherlands).
Nationality: Dutch.
Marital status: Married.

Education:

1970-1976 Gymnasium-B "De Breul" in Zeist.

1976-1980 Study in mathematics with emphasis on computer science. Thesis on computational geometry and dynamic data structures.

1980-1983 Work on PhD.

1983 PhD with title *The design of dynamic data structures*.

Professional Experience:

1977 - 1980 Student assistant at a number of courses.

1980 - 1983 Wetenschappelijk assistent (Research assistant) at the Department of Computer Science, Utrecht University.

1983 - 1987 Universitair docent (Assistant professor) at the Department of Computer Science, Utrecht University.

1987 - 1990 Universitair hoofddocent (Associate professor) at the Department of Computer Science, Utrecht University.

1990 - now Full professor at the Department of Computer Science, Utrecht University.

1990 - 2005 Head of the *Center for Geometry, Imaging and Virtual Environments*.

2004 - now Owner and Director *The Game Maker Company B.V. (www.gamemaker.nl/company)*.

2005 - now Head of the group *Game and Virtual Worlds*.

2006 - now Scientific Director *Game Research for Training and Entertainment*.

2007 - now co-Owner and co-Director *YoYo Games Ltd. (www.yoyogames.com)*.

Teaching experience:

- Courses:
    - Fundamental Algorithms
    - Data Structures
    - Computer Graphics
    - Geometric Algorithms
    - Robotics
    - Communicating computer science
    - Computer Game Design

- Seminars:
    - Animation
    - Dynamic data structures
    - Computational geometry
    - Computational aspects of robotics
    - Motion planning problems
    - Hidden surface removal
    - Assembly planning
    - Path Planning
    - Crowd Simulation

Main research interests:

- Computer game design and technology

- Motion and manipulation planning

- Crowd simulation

Other research interests:

- Computational geometry

- Computer graphics

- Animation

- Virtual environments

- Simulation and visualization

- Computational aspects of robotics

- Algorithms

- Data structures

- Implementation of geometric algorithms

- Shape matching and image databases

Grants

- NWO grant for my own PhD work, 1980–1983 (applied for by J. van Leeuwen).

- SION (NWO) grant for a PhD position on hidden surface removal, 1989–1991.

- co-partner in ESPRIT II BRA 3075 (ALCOM) grant, 1989–1992.

- SION (NWO) grant for a PhD position on motion planning, 1990–1994.

- PIONIER grant (NWO) to set up a research group in computational geometry, with a total budget of 2060 Kf (810 Kf by the university), 1991–1995.

- co-partner in ESPRIT III BRA 7141 (ALCOM II) grant, 1992–1995.

- site leader in ESPRIT III BRA 6546 (PROMotion) grant for a postdoc and a PhD student on robot motion planning, 1992–1995.

- SION (NWO) grant for a three year postdoc position on robotic manipulation, 1995-1998. (Changed in a PhD position in 1996.)

- NATO Collaborative Research Grant, with Prof K. Goldberg, Berkeley, 1996-1997.

- Grant from Philips Research for a PhD position for research on multimedia, 1996-2000 (together with R. Veltkamp).

- SION (NWO) grant for a postdoc and a PhD position on algorithms for label placement (changed into two PhD students), 1996-2000 (together with M. van Kreveld and D. Thierens).

- Prime contractor of ESPRIT IV LTR project 21957 (CGAL) grant for a scientific programmer and a PhD student on implementing geometric algorithms, 1996-1998.

- SION (NWO) grant for a postdoc for research on indexing image databases (part of the larger AMIS project), 1997-1999.

- SION (NWO) grant for extra multimedia equipment as part of the AMIS project (110 Kf), 1997.

- NATO Collaborative Research Grant, with Prof K. Goldberg, Berkeley, 1998-1999.

- site leader in ESPRIT IV LTR 28155 (GALIA) grant for a scientific programmer on a computational geometry library, 1999–2000.

- site leader in ESPRIT IV project 28226 (MOLOG) grant for a postdoc and a PhD student on motion planning for logistics, 1999-2002.

- SION (NWO) grant for two PhD students on motion planning in complex CAD models, 1999-2005 (together with Mark de Berg).

- grant by Microsoft Research for a graphics lab (about 125 Kf), 1999.

- SION (NWO) grant for a PhD student on shape decomposition, 2000-2003 (together with Remco Veltkamp).

- grant for a PhD student by Cornelis Lely Stichting for research on visualization of traffic and transport, 2000-2004 (together with Marc van Kreveld).

- STW (NWO) grant for a PhD student, a postdoc and a scientific programmer for creating a software library of shape matching routines, 2000-2005 (together with Remco Veltkamp).

- grant by Microsoft Research for a graphics lab (Euro 15.000), 2002.

- NWO-EW grant for a PhD student on motion planning for multiple entities, 2002-2007.

- Prime contractor of EU LTR project MOVIE grant for a scientific programmer and a PhD student on motion planning in virtual environments, 2003-2005.

- Bsic project BRICKS, leader subproject Modeling, Simulation and Visualization, grant for 2 PhD students on navigation and manipulation in virtual environments, 2004-2008.

- Lead contractor project GATE: Game Research for Training and Entertainment, Dutch Government, 10 million Euro, 2006–2012.

- RGI grant for project CycloCity, together with the company CycloMedia, 50.000 Euro, 2006–2007.

- Grant by Microsoft Netherlands for research on avatars (Euro 25.000), 2007.

- Partner ITEA project Metaverse1, Utrecht part Euro 300.000, 2008–2011.

- Host for a employee of Motek as part of the Kenniswerkersregeling, 2009–2010.

- Level-Up grant for improving the game technology education program (2009–2012).

Invited Lectures:

Only invited talks at large meetings have been listed; not the numerous talks at universities, companies, and smaller workshops.

- Two invited lectures, NATO Advanced Study Institute on Theoretical foundations of Computer Graphics and CAD, Florence, Italy, June/July 1987.

- Three invited lectures, 14th Czechoslovak Winter School SOFSEM'87, Ostrava, Czechoslovakia, Dec 1987.

- Invited lecture, 1st Scandinavian Workshop on Algorithm Theory, Halmstad, Sweden, Jun 1988.

- One week course on computational geometry, Dept. of Computer Science, University of Turku, Finland, Nov 1988.

- Invited lecture, Summer School on Computational Geometry, Saarbrücken, Germany, Jun 1989.

- One day tutorial on Computational Geometry, Eurographics 1989, Hamburg, Germany, Sep 1989.

- Invited lecture, CSN 89, Utrecht, Nov 1989.

- Invited lecture, Spring School on Motion Planning, Rodez, France, Mar 1993.

- Invited lecture, EDUGRAPHICS'93, Alvor, Portugal, Dec 1993.

- Invited lecture, meeting FNRS-NFWO, Louvaine-la-Neuve, Belgium, May 1994.

- Invited lecture, Summer School on Computational Geometry, Berlin, Germany, Sep 1994.

- Invited lecture, European Workshop on Computational Geometry, Muenster, Germany, Mar 1996.

- Invited lecture, WAFR'96, Toulouse, France, Jul 1996 (with F. van der Stappen and C. Wentink).

- Invited lecture DFG meeting on efficient discrete algorithms and their appications, Dagstuhl, Germany, Nov 1996.

- Invited lecture, Softsem'96, Tsjechie, Nov 1996.

- Invited lecture, bijeenkomst NVTI, Utrecht, Feb 1997.

- One day tutorial on Computational geometry for Robotics during ICRA'98 (together with D. Halperin, F. van der Stappen, and R. Veltkamp).

- Invited lecture, ICALP'98, Jul 1998.

- Invited lecture Upper-Rhine-Region workshop on Algorithms, Bern, Jan, 1999.

- Invited lecture European workshop on computational geometry, Israel, Mar, 2000.

- Invited lecture CIR 2000 (The Challenge of Image Retrieval), United Kingdom, May 2000.

- Invited lecture and workgroup head meeting on Mathematical methods in manufacturing and logistics, Oberwolfach, Dec 2001.

- Invited lecture CGA 2002 (Workshop on Computational Geometry and Applications), Apr 2002.

- Invited lecture ASCI conference, Jun 2002.

- Invited lecture WAFR 2002(Workshop on ALgorithmic Foundations of Robotics), Dec 2002.

- Invited lecture CWI in bedrijf, Oct 2003.

- Invited lecture NIOC 2004, Nov 2004.

- Invited lecture IenI conferentie, Nov 2004.

- Keynote speaker CGAIDE 2004 (Computer Games, Artificial Intelligence, Design and Education), Nov 2004.

- Invited lecture Digitainment conferentie, May 2005.

- Keynote speaker Game Convention Developer Conference 2005, Aug 2005.

- Keynote speaker Computer Game Design and Technology Workshop 2005 (CGTW 2005), Nov 2005.

- Panel chairman Computer Game Design and Technology Workshop 2005 (CGTW 2005), Nov 2005.

- Invited lecture SURF onderwijsdagen, Nov 2005.

- Invited lecture IenI conferentie, Nov 2005.

- Invited lecture Panama conferentie, Jan 2006.

- Invited lecture ICT Kenniscongres, Apr 2006.

- Keynote speaker ACM Symposium on Virtual Reality Software and Technology (VRST) 2006, Nov 2006.

- Invited lecture conference Dutch Game Days, Nov 2006.

- Invited lecture UMC Voorjaarsconferentie, Mar 2007.

- Invited lecture ICT Delta, May 2007.

- Invited lecture Nationaal Congres Serious gaming and simulation, May 2007.

- Invited lecture 2nd Symposium on New Town Simulation, Oct 2007.

- Invited lecture Conference on Game Development in Computer Science Education, Feb 2008.

- Keynote speaker GameDays 2008 Darmstadt, Jun 2008.

- Keynote speaker International Conference on the Learning Sciences (ICLS) 2008, Jun 2008.

- Invited lecture European Symposium on Algorithms (ESA 2008), Sep 2008.

- Invited lecture 25th European Workshop on Computational Geometry, Mar 2009.

- Invited lecture Motion in Games (MIG 2009), Nov 2009.

- Keynote lecture SIREN 2009, the Netherlands, Nov 2009.

- Keynote lecture Interactive Kulturen (Entertainment Inferfaces Track), Duisburg, Germany, Sep 2010.

Dissertations:

promotor

- ir. H. La Poutré, September 5, 1991 (with J. van Leeuwen).
- drs. M.T. de Berg, March 11, 1992.
- drs. E.J. Pol, March 18, 1992 (with F. Peeters, Leiden).
- drs. M.J. van Kreveld, June 1, 1992.
- drs. R. Veltkamp, Nov 19, 1992 (with J. van den Bos, Rotterdam).
- ir F. van der Stappen, Oct 7, 1994.
- drs. J. Vleugels, Mar 5, 1997.
- drs. P. Svestka, Jun 16, 1997.
- drs. C. Wentink, Apr 1, 1998.
- drs. H. Tangelder, Sep 8, 1998 (with I. Horvath, Delft).
- drs. G. van den Bergen, Mar 29, 1999 (with D. Hammer, Eindhoven).
- drs. R. van Oostrum, May 31, 1999.
- drs. M. Hagedoorn, Sep 18, 2000.
- drs. R.-P. Berretty, Dec 4, 2000.
- drs. T. Strijk, Jan 15, 2001.
- drs. S. van Dijk, Nov 26, 2001.
- MSc. H.-K. Ahn, Dec 4, 2001.
- ir. H.-W. Nienhuys, Jun 18, 2003.
- Msc. S. Cabello-Justo, Mar 29, 2004.
- drs. H. Haverkort, May 17, 2004 (with M. de Berg, Eindhoven).
- MSc. M. Tanase, Feb 16, 2005.
- Msc. P. Gianopoulos, Sep 21, 2005.
- drs. R. Geraerts (motion planning), May 8, 2006.
- MSc. I. Reinbacher (geographic information systems), Jun 20, 2006.
- MSc. J. Cheong (robotic manipulation), Nov 6, 2006.

- MSc. R. Typke (pattern matching in music), Feb 19, 2007.
- drs. J. van den Berg (motion planning), Apr 4, 2007.
- drs. D. Nieuwenhuisen (manipulation planning), May 23, 2007.
- drs. E. Moet (geometric algorithms for graphics and GIS), Apr 8, 2008.
- MSc. M. Vahedi (caging polygons with two and three fingers), Sep 16,2009.

co-promotor

- drs. M.H.M. Smid, Univ. of Amsterdam, November 30, 1989.
- M. Corthout, March 18, 1992.

Current PhD-students under my supervision

- drs. A. Kamphuis (motion planning), 2002-2010.
- drs. O. Goemans (robotic manipulation), 2003-2010.
- drs. B. van Basten (natural manipulation), 2007-2011.
- MSc. I. Karamouzas (natural path planning), 2007-2011.
- MSc. S. Groenewegen (crowd simulation), 2009-2013.
- MSc. H. Kruger (animation and manipulation), 2009-2013.

Editorships:

- 1988-1993, editor *Journal of Symbolic Computation*.
- 1990-1992, editor-in-chief *Algorithms Review*.
- 1990-2006, editor *Computational Geometry: Theory and Applications*.
- 1994-2009, editor *Discrete and Computational Geometry*.
- Oct 1994, Guest Editor vol 12, issue 3 of *Discrete and Computational Geometry*.
- 1995-1996, editor *Journal of Universal Computer Science*.
- 2000-2001, editor *IEEE Transactions on Robotics and Automation*.

Program Committees:

- Member program committee 5th ACM Symp. on Computational Geometry, Saarbrücken, Germany, Jun 1989.
- Member program committee STACS 90, France, Feb 1990.
- Member program committee Eurographics Workshop on Computer Graphics and Mathematics, Italy, Oct 1991.
- Member program committee CSN 91, Utrecht, Nov 1991.
- Member program committee SWAT 92, Helsinki, Finland, Jul 1992.
- Chairman program committee 9th ACM Symp. on Computational Geometry, San Diego, May 1993.
- Member program committee ICALP 93, Lund, Jul 1993.
- Member program committee COMPUGRAPHICS'93, Alvor, Portugal, Dec 1993.

- Co-chair program committee second Workshop on Algoritmic Foundations of Robotics, Toulouse, Feb 1996.

- Member program committee ESA'96, Sep 1996.

- Co-chair Workshop on Geometric Computing, Nice, Jun 1997.

- Member program committee Third Workshop on Algorithmic Foundations of Robotics, 1998.

- Member program committee 14th ACM Symp. on Computational Geometry, Minneapolis, Jun 1998.

- Member program committee IROS'98, Victoria, Oct 1998.

- Member program committee Tool and Methods of Competitive Engineering (TMCE 2000), Apr 2000.

- Member program committee Workshop on Algorithm Engineering (WAE 2000), Sep 2000.

- Member program committee 17th ACM Symp. on Computational Geometry, Jun 2001.

- Member program committee Workshop on Algorithm Engineering (WAE 2001), Sep 2001.

- Member program committee Jaarcongres Nieuwe Media, Jun 2001.

- Member program committee ICT-Kenniscongres, Sep 2001.

- Member program committee ICT-Kenniscongres, Sep 2002.

- Member video program committee 20th ACM Symp. on Computational Geometry, Jun 2004.

- Co-chair program committee sixth Workshop on Algorithmic Foundations of Robotics, Utrecht, Jul 2004.

- Member program committee 3rd International Conference on Entertainment Computing (ICEC 2004), Sept. 2004.

- Member program committee 6th International Conference on Computer Games: AI and Mobile Systems (CGAIMS 2005), Jul 2005.

- Member program committee 7th International Conference on Computer Games: Animation, Mobile and Educational Systems (CGAMES 2005), Nov 2005.

- Member program committee WJogos 2005 / SBGames 2005, Brazil, Nov 2005.

- Member scientific committee GAMES 2006, Portugal, Sep 2006.

- Member program committee 3D web games workshop, Italy, Apr 2007.

- Member program committee special track AI and Ambient Entertainment during FLAIRS 2007, USA, May 2007.

- Member program committee "10th International Conference on Computer Games: AI, Animation, Mobile, Educational and Serious Games (CGAMES 2007)", Louisville, U.S.A, Jul 2007.

- Member program committee "Computer Games and their Application", Zurich, Switzerland, Jul 2007.

- Member program committee "Third Annual Microsoft Research Academic Days Conference on Game Development in Computer Science Education", Miami, USA, Feb 2008.

- Member program committee "ACM Symposium on Solid and Physical Modeling", Stony Brook, USA, Jun 2008.

- Member organizing committee "Workshop Motion in Games (MIG 2008)", Utrecht, Jun 2008.

- Member program committee "12th International Conference on Computer Games: AI, Animation, Mobile, Educational and Serious Games (CGAMES 2008)", Louisville, U.S.A., Jul 2008.

- Member program committee "Fourth Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE 2008)", Stanford, U.S.A., Oct 2008.

- Member program committee "13th International Conference on Computer Games: AI, Animation, Mobile, Educational and Serious Games (CGAMES 2008)", Wolverhamton, UK, Nov 2008.

- Member program committee "Workshop on Algorithmic Foundations of Robotics (WAFR)", Mexico, Dec 2008.

- Member program committee "Symposium on AI and Games", Edinburgh, UK, Apr 2009.

- Member program committee "Fourth Conference on the Foundations of Digital Games (FDG)", Orlando, USA, Apr 2009.

- Co-chair program committee "Computer Animation and Social Agents (CASA09)", Amsterdam, Jun 2009.

- Member program committee "Fifth Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE 2009)", Stanford, U.S.A., Oct 2009.

- Co-chair program committee "Workshop Motion in Games (MIG 2009)", Zeist, Netherlands, Nov 2009.

- Member program committee "Computer Animation and Social Agents (CASA 2010)", Saint-Malo, France, May 2010.

- Member program committee "Fifth Conference on the Foundations of Digital Games (FDG)", California, USA, June 2010.

- Member program committee "Sixth Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE 2010)", Stanford, U.S.A., Oct 2010.

Other services:

Here are some of the more important other committees I haver served on and other services I have done.

- One of the directors, Summer School on Computational Geometry, Saarbrücken, Germany, Jun 1989.

- Organiser 8th European Workshop on Computational Geometry, Utrecht, the Netherlands, Mar 1992.

- Advisor Philips Research, 1999.

- 1993-2000, external expert GI Fachgruppe 0.1.2 (Algorithmische Geometrie).

- Member project jury STW, Feb 1994.

- 1995-2000, Member of the board of SION, the committee of NWO dealing with computer science research in the Netherlands.

- 1997–1999, Chair steering committee for the ACM Symp. on Computational Geometry,

- 2000-2003, Chair IPN (Computer Science Research Platform in the Netherlands), that represent all academic computer science research in the Netherlands.

- 2001-2004, Chair ACI (Advisory Committee for Computer Science), the committee of NWO dealing with computer science research in the Netherlands.

- 2002-2004, Member ICT-Forum, the advisory committee of the ministries of Education and Trade dealing with computer science research in the Netherlands.

- 2002-2005, Member board CWI, since 2004 vice chairman.

- 2001-2005, Member Scientific Advisory Board Max-Planck-Institut fur Informatik.

- 2004-2007, Member program committee VIEW, NWO.

- 2005-2006, Chair Utrecht Platform for Game Education and Research(UPGEAR).

- 2005-now, Member Koninklijke Hollandsche Maatschappij der Wetenschappen.

- 2005-2009, Member advisory board Lorentz-van Iterson Fonds TNO.

- 2006-2009, Member advisory board Nederlandse Game Dagen (Dutch Game Days).

- 2006-2008, Member program board Lorentz Center Leiden.

- 2007-now, Member program committee I-Science, NWO.

- 2007-now, Member board of The Dutch Game Garden, Utrecht, an incubator for new game companies.

- 2007-2009, Member board of IIP-CREATE.

- 2008-now, Member scientific advisory board, Excellence Cluster on Multimodal Computing and Interaction, Saarland, Germany.

- 2008-2009, Member agenda committee Creative Industry, NWO.

- 2008-now, Member board Dutch Game Association.

- 2009, Member jury Christiaan Huygens science award.

- 2009-now, Member advisory board IIP-CREATE.

- Referee for project proposals from NWO, NSF, the Israeli Science Foundation, ESPRIT, EU, IWT, etc.

- Reviewer for EU projects.

- Referee for numerous journals and conferences.