CURRICULUM VITAE

Name	:	Janek Kozicki
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Education

- **2015** — **M.Sc.**, Physics, University of Gdańsk, *Speciality*: **Theoretical Physics**, Thesis: *„Time dependent approach to hydrogen–positron reactive collision"*.
- **2014** — **Habilitation**, Civil Engineering, Gdańsk University of Technology, *Speciality*: Material mechanics, a series of monographs and publications titled: *„Numerical modelling of microstructure in engineering materials using discrete element method"*.
- **2013** — **B.Sc**, Physics, University of Gdańsk, *Speciality*: **Theoretical Physics**.
- **2007** — **Ph.D.** Civil Engineering, Gdańsk University of Technology, *Speciality*: Discrete models, Thesis: *„Application of Discrete Models to Describe the Fracture Process in Brittle Materials"*. Promoter: Prof. J. Tejchman.
- **2004** — **M.Sc.** Architecture, Gdańsk University of Technology, *Speciality*: Architecture in extreme conditions, Diploma: *„Portable architecture: a research outpost on Mars"*. Promoter: Dr. W. Leszkiewicz.
- **2002** — **M.Sc.** Civil Engineering, Gdańsk University of Technology, *Speciality*: Construction theory, Thesis: *„Discrete Methods used to describe the behaviour of quasi-brittle and granular materials"*. Promoter: Prof. J. Tejchman.

International Scholarships

- **2009** — *USA*, University Utah, Salt Lake City, invited by Prof. J. D. Miller to conduct a seminar on working with YADE software, focusing on rock fracturing.
- **2008–2009** — *France*, post–doc on University Joseph–Fourier in Grenoble. Numerical modelling of snow using YADE software, under supervision of Prof. J. Meyssonnier and Prof. F. Donze.
- **2005** — *France*, 7 month scholarship on University Joseph–Fourier in Grenoble. Numerical modelling of granular and cohesive materials, under supervision of Prof. F. Donze.
- **2001** — *Great Britain*, 2 month scholarship on University of Birmingham. Numerical modelling of granular materials with Discrete Element Method, under supervision of Prof. C. Thornton.

Awards and Achievements

- **2011–2014** — Member of the commission for the evaluation of applications for the Ministry of Science and Higher Education prize.
- **2010–2013** — Ministry of Science and Higher Education prize, granted **for 32 best scientists in Poland**, under age 35. After I was awarded, the prize was extended to 85 people.
- **2001–2013** — 50 publications (peer-reviewed journals and conference materials), 11 of them were published in highly–ranked journals from ISI Master Journal List. And one book published by Springer.
- **2008, 2009** — An award for young scientists „START", granted in two consecutive years by Foundation for Polish Science **for 100 best scientists in Poland** under age 31.
- **2007** — 2nd place in „Space Settlement Calendar Art Contest" held by National Space Society (USA).
- **2005, 2006** — Two PhD research grants from the dean of Civil and Environmental Engineering Faculty.

- **2005** — An award for young scientists from Lotos, Polpharma and Jabil Circuit Poland companies.
- **1997–2002** — Yearly commend of Vice Chancellor for Education for students achieving best results in studies on Civil and Environmental Engineering Faculty.
- **1998–1999** — Commend of Vice Chancellor for Education for students achieving best results in studies on Architecture Faculty.
- **1998** — 2nd place in Mathematics–Physics Competition held at the Gdańsk University of Technology.
- **1995** — Participation in Informatics and Programming Polish National Competition, Stage II.
- **1994–2005** — Multiple awards at Night Orienteering competitions on rough terrain (forests and swamps) held each year by Student Association of Tourist Guiders.

Languages

- **English** — excellent, over 50 publications, a PhD thesis and two books written in English. First Certificate in English (1997), Cambridge English: Advanced (2012)
- **French** — communicative,
- **Russian** — communicative.

Computer Knowledge

- **languages** — **C++ (STL, Boost)**, TEX, LATEX, gnuplot – excellent, over 15 years experience,
  bash, zsh, C, pascal, OpenGL, QT3, QT4 – medium, over 10 years experience,
  lisp, RPL, OCaml, saturn assembler – basics, below 1 year experience,
- **linux** — administration, maintenance, office software – over 15 years debian linux experience,
- **software** — vim, autocad – over 10 years experience.

15 years Experience in C++ Programming

- **YADE** — `https://www.yade-dem.org/` – YADE is an extensible open–source framework for discrete numerical models, focused on Discrete Element Method. I started it in year 2005 as my PhD thesis project. I am the founder of this software and till year 2009 the lead developer. It makes extensive use of Boost, OpenGL and QT libraries and adheres C++ Object Oriented programming principles. YADE is currently used in Joseph-Fourier University in Grenoble (France), University of Tennessee in Knoxville (USA), Czech Technical University in Prague and The University of Queensland in Australia. **More than 50 publications were written by various authors with results obtained using YADE** `https://www.yade-dem.org/doc/publications.html`, I made 20 publications with results or describing the software, 4 of them are in highly ranked journals.
- **sawfish** — `http://sawfish.wikia.com` – Sawfish is a window manager used on linux desktop. It is written in C and Lisp. The project was started by John Harper in year 2000, who abandoned it in 2005. In year 2007 I took over the development of the project, made several new releases and revived it. Afterwards more people came who liked using it and in year 2009 I passed the lead to new developer Christopher Bratusek.
- **LGA** — Lattice Granular Automaton is a cellular automaton simulation software developed for my master thesis. It uses xlib or winapi. It is extraordinary, because it preserves collision energy between the particles, which is rare in lattice gas automaton research. I made 12 publications (1 in a highly ranked journal) describing obtained results, it was **cited more than 20 times** by other researchers around the world.

- **koreluj** — Koreluj is a small C++ application that allows calculating strain deformations on the surface of concrete, given digital photographs of the surface of concrete. It is called a Digital Image Correlation technique. It is used to verify numerical calculation with the experimental results with respect to the deformation of concrete and fracture propagation. I developed it is a part of my PhD thesis, and made 2 publications about it. Two other PhD students at my university used it to write their PhD theses.
- **evol** — Evol (1996) is a simulation of simple evolution concept, where I implemented an interpreter of a simple ad-hoc assembly language, and programs written in this language compete with each other to take over all of the available memory in a concept similar to Core Wars. Their evolution is implemented by allowing them to cross–breed and mutate to gain evolutionary advantage over other programs. It is a pet project written in Pascal, in year 1996, only 2200 lines of code.
- **eng3d** — Eng3d (1992) is a 3D graphics engine implemented in i386 assembly language operating in BIOS mode 13h. I have written it in year 1992, when DOS was still in common use and 3D graphics engines were not as popular as OpenGL currently is.

10 years Experience in Material Engineering and Discrete Modelling

- **YADE** — I have implemented in YADE a Discrete Element Method, a Lattice Geometrical Model (described in my PhD thesis) and worked with them for over 10 years now. Mainly in the application to modelling behaviour of concrete, concrete with steel–fibre reinforcement or granular materials such as sand. Over 20 publications in high ranked journals have been published by independent researchers, using the results from my software.
- **LGA** — In year 2000 I used Lattice Granular Automaton to describe behaviour of granular materials. My publication about this topic has been cited 15 times so far, by independent researchers.

Other interests

- **physics** — I am passionate about physics, and despite successful career in discrete numerical modeling for civil engineering purposes I am currently switching my research career to physics. For this purpose, after I returned to Poland in 2009 (from my post-doc in France), I started attending physics course. In 2013 I obtained a bachelor degree in theoretical physics, while nearly at the same time I obtained habilitation degree in material mechanics in civil engineering. Currently I am working on my (third) master thesis in theoretical physics focusing on numerical solutions, using yade, to a quantum dynamical three–body problem described by Dirac equation.
- **Mars** — I am very interested in colonisation of Planet Mars. In my secondary master thesis about architecture in extreme conditions I made a design for a Martian Base which can be inhabited by 8 people. This design was published on COSPAR conference in year 2008, and was welcomed with great interest from NASA, ESA and JAXA representatives. This interest in Mars also extends to my family as my wife made a PhD thesis about Martian Base for thousands of inhabitants.
- **astro** — I am an amateur astronomer, and I like watching skies when there's a time for it. I own a small Schmidt-Cassegrain telescope MTO11-CA, a Fujinon FMT-SX 16×70 binocular and Explore Scientific 127mm APO refractor.
- **travel** — I like tourist travelling across foreign countries. In 1997–2002 I was hitchhiking across Europe visiting nearly all European countries along the way. A trip of my life was in 2001, when I spent 2 months travelling through Russia, Mongolia and China, spending only 500 USD on that trip, which included transsiberian train hitchhiking. In 1997–2000 I finished a course led by Association of Tourist Mountain Guiders, and I am licensed to led tourist trips in Sudety Mountains in Poland.