

# Nikolai HUNGR

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Age: 34

## Electromechanical Engineer Specialized in Medical Robotics



### PROFESSIONAL EXPERIENCE

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- 2008/Present Medical Robotics Research Engineer:** TIMC-IMAG Laboratory (CAMI Team), Koelis SAS and Grenoble University Hospital (*Grenoble, France*)
- *Description:* design and validation of needle puncture robots: **prostate brachytherapy** and **needle insertion** for interventional radiology.
  - *Expertise:* mechanical design, electronics, C++ programming, image processing.
  - *Experiences acquired:* MR/CT/US imaging, creation of clinical protocols, creation of technical specifications and risk analysis for clinical trials, drafting of project grants, team management, subcontractor management, student supervision, phantom and cadaver experimentation.
- 2006 to 2008 Medical Haptics Research Project:** Praxim, S.A. (*Grenoble, France*)
- *Description:* design of a robot for bone milling in knee surgery.
  - *Expertise:* haptics, automatic control.
  - *Experiences acquired:* mechanical design, cadaver experimentation.
- 1999 to 2005 Visual Basic and C++ Programmer:** O. Hungr Geotechnical Research, Inc. (*Vancouver, Canada*)
- *Description:* creation of software for the 3D analysis of landslides and avalanches.
- 2001 (2 mths) Programming Consultant:** BC Hydro (*Vancouver, Canada*)
- *Description:* Software for the analysis of data collected in hydro dams.

### EDUCATION

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- 2010 to 2014 PhD in Instrumentation and Imaging in Medicine:** University of Grenoble (*Grenoble, France*)
- *Thesis:* medical image guided needle insertion robots.
- 2006 to 2008 Masters of Applied Science in Mechanical Engineering :** University of British Columbia (*Vancouver, Canada*) and Ecole National Supérieur des Arts et Métiers (ENSAM - *Paris, France*)
- *Specialties:* kinematics and dynamics of robots, finite element analysis, medical imaging, implant design, biomechanics and surgical navigation, human anatomy.
- 1998 to 2003 Bachelor of Applied Science in Mechanical Engineering :** UBC (*Vancouver, Canada*)
- *Specialties:* biomechanics, machining, engineering materials, numerical instrumentation.

### PUBLICATIONS

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- Journal Articles** IEEE Trans. on Robotics (2012), IEEE Trans. on Haptics (2012), Medical Physics (2012), Journal of Urology (2012).  
**Conferences** MICCAI (2011), IEEE EMBC Mineapolis (2009), CAOS Hong Kong (2008).  
**Patents** US Patent Pending (2012), French Patent with PCT Extension (2010).

### TECHNICAL SOFTWARE

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- Design** SolidWorks, Pro/ENGINEER, Alibre Design.  
**Programming** C++, Qt, VTK, ITK, Visual Basic, VB for Applications, Matlab, Simulink, HTML, CSS, PHP.  
**Other Software** Adobe Photoshop, Dreamweaver, Filemaker Pro.

### LANGUAGES AND NATIONALITIES

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- Languages** **English, French and Spanish:** trilingual. **Czech:** mother tongue.  
**Nationalities** Canadian and Czech.

### HOBBIES AND INTERESTS

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Cycling, backcountry skiing, alpinism, classical piano.