DAVID GARCIA MATO

BIOMEDICAL ENGINEER

 Madrid, Spain   dgmato.github.io   linkedin.com/in/davidgarciamato   github.com/dgmato

EXPERIENCE

Biomedical Engineer at **Universidad Carlos III de Madrid**
Department of Bioengineering and Aerospace Engineering

 September 2015 – Ongoing   Madrid,Spain

- Software development for computer-assisted maxillofacial surgery.
- Surgical navigation and augmented reality in surgical oncology.
- Medical image processing, tracking systems, 3D printing.
- Supervisor: Javier Pascau

Research Engineer at **Queen's University**
Laboratory for Percutaneous Surgery (Perk Lab)

 March 2019 – April 2019   Kingston, ON, Canada

- Surgical simulation and training based on eye tracking device.
- Supervisor: Gabor Fichtinger

Research Engineer at **Children's National Medical Center**
Sheikh Zayed Institute for Pediatric Surgical Innovation

 January 2019 – March 2019   Washington, DC, United States

- Automatic virtual planning in pediatric neurosurgery.
- Quantifying overcorrection in craniosynostosis reconstruction planning.
- Supervisor: Marius George Linguraru

Research Engineer at **Queen's University**
Laboratory for Percutaneous Surgery (Perk Lab)

 November 2016 – May 2017   Kingston, ON, Canada

- Development of 3D gaze tracking using eye and head pose tracking
- Gaze tracking for skill assessment in US-guided needle insertions.
- Supervisor: Gabor Fichtinger

Research Engineer at **Medical Imaging Laboratory**
Hospital General Universitario Gregorio Marañón

 June 2015 – July 2015   Madrid, Spain

- Ultrasound-guided breast tumor resection using based on EM tracker.
- Desktop 3D Printing to improve surgical navigation in acral tumors.

Internship at **Medical Imaging Laboratory**
Hospital General Universitario Gregorio Marañón

 February 2015 – June 2015   Madrid, Spain

- Multicamera tracking system for intraoperative radiation therapy.

MY LIFE PHILOSOPHY

"Winners are not people who never fail but people who never quit"

EXPERTISE

Computer-Assisted Interventions
Medical Imaging Tracking Systems
3D Printing Data Analysis Research

EDUCATION

Ph.D. in Biomedical Engineering
Universidad Carlos III de Madrid

 Oct 2016 – Ongoing   Madrid, Spain

M.Sc. in Multimedia and Communications
Universidad Carlos III de Madrid

 Sep 2015 – Sep 2016 Madrid, Spain

B.Sc. in Biomedical Engineering
Universidad Carlos III de Madrid

 Sep 2011 – Jun 2015 Madrid, Spain

International Mobility Program
Queensland University of Technology

 Jul 2014 – Dec 2014   Brisbane, Australia

STRENGTHS

Hard-working Problem Solving Skills
Eye for detail Creativity Teamwork
Constant Learner Natural Curiosity

LANGUAGES

Spanish ●●●●●

English ●●●●○

French ●●○○○

TEACHING

Advanced Topics on Medical Imaging
B.Sc. in Biomedical Engineering, Universidad Carlos III de Madrid

📅 January 2016 – Ongoing   📍 Madrid, Spain

Image Processing and Reconstruction
B.Sc. in Biomedical Engineering, Universidad Carlos III de Madrid

📅 January 2016 – Ongoing   📍 Madrid, Spain

Medical imaging techniques and applications
Improvements in Education Quality and Innovative applications in Biomedicine, Universidad Carlos III de Madrid

📅 November 2018   📍 Madrid, Spain

Image Processing with ImageJ
Instituto Nacional de Técnica Aeroespacial (INTA)

📅 November 2018   📍 Madrid, Spain

GuidedUS: Hands-on Tutorial on Rapid Prototyping of Ultrasound-guided Intervention Systems
Medical Image Computing and Computer-Assisted Interventions 2018

📅 September 2018   📍 Granada, Spain

Tutorial on Rapid prototyping of image guided therapy applications on open sources software platform
Computer Assisted Radiology and Surgery conference 2018

📅 June 2018   📍 Berlin, Germany

Supervisor of bachelor's thesis: "Building and Validation of Low-Cost Breast Phantoms for Interventional Procedures"
B.Sc. in Biomedical Engineering, Universidad Carlos III de Madrid

📅 January 2018 - June 2018   📍 Madrid, Spain

Python for Beginners
Universidad Carlos III de Madrid

📅 December 2017   📍 Madrid, Spain

Image Processing and 3D Visualization
Master's degree in Medical Physics. UNED

📅 June 2016   📍 Madrid, Spain

Medical Instrumentation and Devices
B.Sc. in Biomedical Engineering, Universidad Carlos III de Madrid

📅 November 2015   📍 Madrid, Spain

AWARDS

🏆 **Erasmus+ International Grant**
February 2019

🏆 **UC3M Ph.D. Mobility Grant**
January 2019

🏆 **ISCAS Student Travel Award**
June 2018

🏆 **Hamlyn Symposium Travel Award**
June 2017

🏆 **ISCAS-CARS Best Poster**
June 2016

🏆 **UC3M M.Sc. Full Scholarship**
September 2015

🏆 **UC3M B.Sc. Mobility Grant**
July 2014

CERTIFICATES

✱ **Defibrillator and CPR First Aid**
October 2017

✱ **IELTS English Certificate [7.5]**
April 2016

✱ **First Certificate in English (FCE)**
June 2009

FURTHER TRAINING

➕ **Medical Imaging Summer School**
July 2018 - Favignana, Italy

➕ **Int. Summer School on Deep Learning**
July 2017 - Bilbao, Spain

➕ **Queensland University of Technology Course: Introducing Robotics**
February 2017 - Online

➕ **UCL Medical Image Computing Summer School (MedICSS)**
July 2016 - London, UK

➕ **University of Twente Course: Ultrasound Imaging**
May 2016 - Online

➕ **University of Wollongong Course: 3D Bioprinting**
April 2016 - Online

➕ **University of Reading Course: Begin Robotics**
March 2016 - Online

📄 JOURNAL ARTICLES

- <u>D. García-Mato</u>, E. Marinetto, A. García, S. Martínez, M. Desco, J. Pascau. **Multicamera Optical Tracker Assessment for Computer Aided Surgery Applications**. IEEE Access, vol. 6, pp. 64359-64370, 2018. [doi: 10.1109/ACCESS.2018.2878323]

- R. Moreta-Martinez, <u>D. García-Mato</u>, M. García-Sevilla, R. Pérez-Mañanes, J. A. Calvo, J. Pascau. **Augmented reality in computer-assisted interventions based on patient-specific 3D printed reference**. Healthcare Technology Letters, pp. 1–5.

- M. García-Sevilla, J. De León-Luis, R. Moreta-Martínez, <u>D. García-Mato</u>, R. Pérez-Mañanes, J. A. Calvo-Haro, J. Pascau. **Performance Evaluation to Improve Training in Forceps-Assisted Delivery**. OR 2.0 Context-Aware Operating Theaters, Computer Assisted Robotic Endoscopy, Clinical Image-Based Procedures, and Skin Image Analysis, pp. 69-77

👥 CONFERENCE PROCEEDINGS

- R. Moreta-Martinez, <u>D. García-Mato</u>, M. García-Sevilla, R. Pérez-Mañanes, J. A. Calvo, J. Pascau. **AR in computer-assisted interventions based on patient-specific 3D printed reference**. Augmented Environments for Computer-Assisted Interventions Workshop, MICCAI 2018, Granada, Spain. Oral presentation.

- M. García-Sevilla, J. De León-Luis, R. Moreta-Martínez, <u>D. García-Mato</u>, R. Pérez-Mañanes, J. A. Calvo-Haro, J. Pascau. **Performance Evaluation to Improve Training in Forceps-Assisted Delivery**. OR 2.0 Context-Aware Operating Theaters Workshop, MICCAI 2018, Granada, Spain. Oral presentation.

- M. Tousidonis, <u>D. García-Mato</u>, G. Arenas, E. Bullejos, J. Pascau, S. Ochandiano. **Orbital reconstruction workflow based on desktop 3D printing and open-source navigation system**. European Association for Cranio-Maxillo-Facial Surgery 2018, Munich, Germany. Poster presentation.

- G. Arenas, <u>D. García-Mato</u>, M. Tousidonis, P. Montes, J. Pascau, S. Ochandiano. **Open Source Navigation System and CAD-CAM Technology in Surgical Treatment of Craniosynostosis**. European Association for Cranio-Maxillo-Facial Surgery 2018, Munich, Germany. Oral presentation.

- E. León-Román, P. Sanz-Ruiz, <u>D. García-Mato</u>, I. López-Torres, J. Pascau , J. Vaquero-Martín **Estudio comparativo experimental en rodillas de cadáveres entre la prótesis CCK y bisagra rotatoria**. Congreso Nacional de la Sociedad Española de Cirugía Ortopédica y Traumatología, Valladolid, Spain. Oral presentation.

- <u>D. García-Mato</u>, M. S. Holden, A. Lasso, A. Szulewski, J. Pascau, G. Fichtinger **3D Gaze Tracking for Skill Assessment in Ultrasound-Guided Needle Insertions**. Computer Assisted Radiology and Surgery (CARS) conference 2018, Berlin, Germany. Oral presentation.

- <u>D. García-Mato</u>, S. Ochandiano, M. Tousidonis, R. Moreta-Martínez, M. García-Sevilla, M. Desco, J. Pascau **Orbital Floor Reconstruction Workflow based on 3D Printing and Surgical Navigation**. Computer Assisted Radiology and Surgery (CARS) conference 2018, Berlin, Germany. Poster presentation.

- <u>D. García-Mato</u>, E. León-Román, M. García-Sevilla, P. Sanz-Ruiz, R. Pérez-Mañanes, J. A. Calvo, F. Forriol, M. Desco, J. Vaquero-Martín, J. Pascau **Knee Joint Goniometry using MARG low-cost sensors**. Computer Assisted Radiology and Surgery (CARS) conference 2018, Berlin, Germany. Poster presentation.

- <u>D. García-Mato</u>, A. Lasso, A. Szulewski, J. Pascau, G. Fichtinger. **3D Gaze Tracking based on Eye and Head Pose Tracking**. 10th Hamlyn Symposium on Medical Robotics 2017, London, United Kingdom. Oral + Poster Presentation.

- R. López-Velazco, <u>D. García-Mato</u>, G. Rodríguez-Lozano, M. García-Sevilla, E. Marinetto, D. García-Olmo, M. Desco, M. Ortega-López, J. Pascau. **Image Guidance for Sacral Neuromodulation**. Computer Assisted Radiology and Surgery (CARS) conference 2017, Barcelona, Spain. Oral Presentation.

- <u>D. García-Mato</u>, A. Lasso, A. Szulewski, J. Pascau, G. Fichtinger. **3D Gaze Tracking based on Eye and Head Pose Tracking**. Queen's Graduate Computing Society Conference 2017, Kingston, Canada. Oral Presentation.

- <u>D. García-Mato</u>, E. Marinetto, R. López, M. García-Sevilla, M. Desco, J. Pascau. **Cervical Range of Motion Measurement using MARG Low-Cost Sensors**. Interactive Medical Image Computing (IMIC) Workshop. MICCAI 2016, Athens, Greece. Oral Presentation.

- R. López-Velazco, <u>D. García-Mato</u>, G. Rodríguez-Lozano, M. García-Sevilla, E. Marinetto, D. García-Olmo, M. Desco, M. Ortega-López, J. Pascau. **Navegación quirúrgica de la Neuromodulación de las Raíces Sacras**. Spanish Society of Biomedical Engineering Annual Conference 2016, Valencia, Spain. Oral Presentation.

- V. García-Vázquez, G. Rodríguez-Lozano, R. Pérez-Mañanes, J. A. Calvo, <u>D. García-Mato</u>, M. Cuervo-Dehesa, M. Desco, J. Pascau, J. Vaquero. **Desktop 3D Printing in medicine to improve surgical navigation in acral tumors**. Computer Assisted Radiology and Surgery (CARS) conference 2016, Heidelberg, Germany. Poster Presentation.

- <u>D. García-Mato</u>, E. Marinetto, L. Sanz-Díaz, M. Desco, J.Pascau. **Calibration developments for multicamera optical tracking systems**. Spanish Society of Biomedical Engineering Annual Conference 2015, Madrid, Spain. Poster Presentation.