



Vision:

- Develop next generation of healthcare solutions
- Healthier People and Communities
- Effective and smarter spending
- Proactive Healthcare

Cloud Based Approach for Healthcare:

- New integrated model
- Population and individual data analysis
- Person-centered patient care
- Context-aware data analysis

Desired End Results:

- Effective solution ready to address heterogeneous data and multitude of constraints (clinical/medical, social, cognitive, semantic mismatch, etc.)
- Transformation of Healthcare from reactive to preventive.
- Improve patient outcomes, decrease costs and address challenging health problems

What Can we Offer

- Multimodality Imaging
- Data Analytics
- Software Development
- Computer Aided Diagnostic Tools
- Data security and privacy
- Mobile Health Applications
- Health Games
- Cloud-based solutions

Medical Research Needs ?

- Basic and clinical Research
- Translational Medicine
- Sector-wide Solutions:
 - Healthcare Providers
 - Insurance Companies
 - Health Professionals
 - Patients

Sample of Current Research

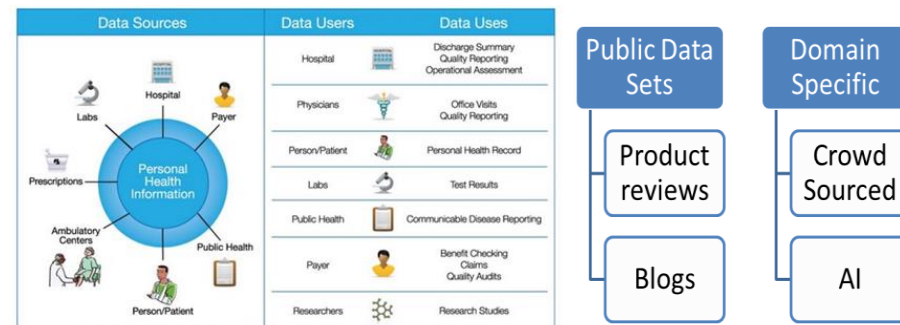
Medical Imaging

- Colorectal Cancer Polyp recognition from endoscopy
- Pressure Ulcer segmentation and 3-D Reconstruction (Collaboration with Georgetown initiated)
- Breast cancer assessment



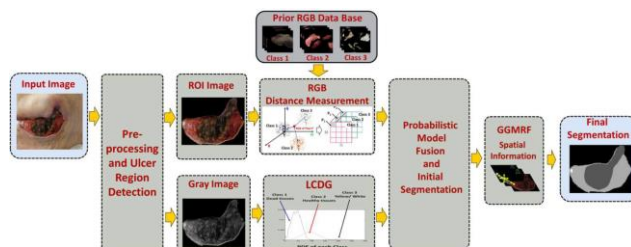
Data Analytics

- Health related tweet analysis
- Multimedia patient records
- Sentiment Analysis from Speech and Text



Mobile Health

- Mobile Application for Ulcer Imaging (U.S. Provisional Patent Application No. 62/508,493 - Method and System for Monitoring and Evaluation of Pressure Ulcer Severity)
- IntegraTrack (Compliance Tracking) and First Glance (Hospice Recommendation App) (Contract with Kindred Healthcare)



Health Games

- FRED (Frailty Game for the Elderly using Kinect)
- Game Design with Biofeedback (Some applications for Autism)



Research Team

Begoña Garcia-Zapirain



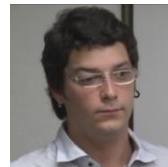
Born in San Sebastian (Spain). She graduated in Communications Engineering, specializing in Telematics at the Basque Country University, Bilbao (Spain) in 1994. In 2003, she defended her doctoral thesis in the pathological speech digital processing field. After many years of working for ZIV Company, in 1997. PhD. García joined the University of Deusto faculty as a lecturer in signal theory and electronics. She has been the head of the Telecommunication Department at the University of Deusto since 2002. In 2001 she created the e-Life research group at the same university, playing the role of lead researcher. She has participated in more than 80 research projects on international, national and regional levels, published more than 40 papers in international scientific journals, and presented more than 160 papers in international and national scientific conferences.

Adel S. Elmaghrawy



Professor and Chair of the Computer Engineering and Computer Science Department at the University of Louisville and the Director of the Innovative and Emerging Technologies Lab. He has also held appointments at the Software Engineering Institute - Carnegie-Mellon University, and the University of Wisconsin-Madison. He advised over 60 master's graduates and 25 doctoral graduates. His research contributions and consulting spans the areas of Intelligent Multimedia Systems, Neural Networks, PDCS, Visualization, and Simulation. His Research applications include Smart Cities, Medical Imaging, Bioinformatics, and Computer-Aided Diagnostics. He has over 200 publications. Dr. Elmaghrawy continued collaborations, mentoring, and scientific contributions have resulted in research funding, international collaboration, and published articles in many prestigious journals such as IEEE-TMI, Medical Physics, Journal of Neuroscience Methods, and Protein Engineering. and is a proud Honorary Kentucky Colonel.

Daniel Sierra-Sosa



Daniel Sierra-Sosa is a Physics Engineer from EAFIT University at Medellin, Colombia. He obtained his Ph.D. from the Faculty of Science, School of Physics at National University of La Plata, Argentina in 2014 with the thesis Phase Singularities Study with Applications to Metrology. He have worked as researcher in projects related with Opto-Digital Image Processing, Signal Processing, Metrology, Big Data and Data Analytics, among others. Dr Sierra-Sosa is currently a visiting lecturer/researcher in the Computer Engineering and Computer Science Department CECS at University of Louisville. His research interest includes Signal Processing, Computer Vision and Computer Imaging.

Other Collaborators

- Students
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 - Joy Li
- Other Faculty
 - Ayman Elbaz