

JOHN "JACK" DIGIOVANNA

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SKILLS

- **Leadership:** Developed and led distributed, multidisciplinary teams of up to 12 direct reports. Also influenced others in the company by leading without authority.
- **Communication:** Distilled complex technical or physiological content into clear, engaging talks and pitches. Empathetic, team-focused personality helps me foster collaboration and development.
- **Machine Learning:** Invented a neuroprosthetic controller leveraging reinforcement learning. Discovered underlying features in high-dimensional, physiological time series.
- **Problem Solving:** Quickly learned new skills. One example is delivering a well-received lecture at a genomics conference within six months of joining Seven Bridges; I had no prior genomics knowledge.

RECENT EXPERIENCE

Seven Bridges Genomics

Oct 2017 - present

General Manager - NGS Health Applications

Cambridge, MA

- NGS Health Applications includes diagnostics, predictive models, and clinical capabilities. Responsible for strategic direction, business growth, client success, and product development in this segment.

Director of Program Management

Nov 2016 - Sept 2017

- Closely collaborated with key stakeholders to curate the Seven Bridges Product Roadmap for the approximately 200 member development team
- Represented the company at multiple high-level meetings and talks including invited presentations and pitches to C-Suite
- Co-developed and implemented process to improve capability prioritization, product-market fit, and readiness to sell. Aligned product launches to external pressures and opportunities
- Supported and grew the Program Management Team. Team more than doubled; stabilizing at eight program managers (direct reports)
- Led program management of Seven Bridges Sonar - a new product line for population-level variant analysis in precision medicine

Program Manager - Automation

Nov 2015 - Oct 2016

- Interacted with diverse external stakeholders, from executive level to technical staff at organizations ranging from federal governments and pharmaceutical companies to academic, nonprofit and biotechs.
- Defined strategic priorities, guided decisions, and eliminated road blocks to enable the team to build the products to transform biomedical research.
- Researched, understood, and prioritized the user needs. Curated this information and incorporated it into the product development roadmap
- Led large, cross-team initiatives and ensured seamless communication throughout project life cycles.
- Presented scientific and technical aspects of our products at conferences.

Translational Neural Engineering Lab; EPFL

2012-2015

Senior Scientist

Lausanne, Switzerland

- Revealed crucial features underlying locomotion from multi-neuron recordings from the hindlimb cortex. This relationship was previously disputed, but opens new prosthetic development paths.
- Innovated research directions through supervision of three PhD students. Led development of a brain- spinal interface in rats. First team to demonstrate robot control after spinal cord injury.
- Slashed clinical characterization time by modeling response to vestibular prosthetic onset, then searching over the models parameter space. This search would have been infeasible in patients.

CLONS (vestibular prosthetic)

2009-2013

Project Manager

Zurich, Switzerland

- Coordinated communication in a distributed team of academic, clinical, and industrial partners. Established wikis, webpages, bi-annual project meetings, and modified Gantt charts as needed.
- Consortium developed technologies that advanced the state of the art from animal models prototypes to acute clinical testing (first in the world) of vestibular prosthetics in human patients.
- Also responsible for 400k portion of budget at ETH and a small distributed team (2-3 people). Experimented with Agile to better adapt to unknown research outcomes.

Neuroprosthetics Control Group; ETH Zurich

2009 - 2012

Postdoctoral Researcher

Zurich Switzerland

- Designed, executed, and analyzed experiments to test cortical activation preceding movement. Provided crucial support for rehabilitated rats regaining control after spinal cord injury.
- Established chronic extracellular recording capabilities and infrastructure for closed-loop neuroprosthetic control. This dramatically expanded the labs research possibilities.
- Co-authored research grants for neuroprosthetic systems. Responsible for a €415k portion of the NeuWalk(prosthesis for spinal cord injury) budget.

EDUCATION

The University of Florida

Dec 2008

PhD in Biomedical Engineering (GPA: 3.89)

The Pennsylvania State University

Dec 2002

BS in Electrical Engineering (GPA: 3.68)

PATENT

J. DiGiovanna et al., System and method for BMI control using reinforcement learning, US Patent No. US20100137734 A1. [link] Priority date: 2007. Issue date: June 2015.

SELECTED PUBLICATIONS

I have 35 peer-reviewed journal or conference publications. Complete list with links to full-texts.

- R. van den Brand*, J. Heutschi*, Q. Barraud, **J. DiGiovanna**, K. Bartholdi, M. Huerlimann, L. Friedli, I. Vollenweider, E. Martin Moraud, S. Duis, N. Dominici, S. Micera, P. Musienko, and G. Courtine, Restoring Voluntary Control of Locomotion after Paralyzing Spinal Cord Injury Science, vol 336, pp. 1182-1185, 2012
- G. Courtine, S. Micera, **J. DiGiovanna**, and J. del R. Millan, Brain-machine interface: one step closer to therapeutic reality? Lancet (comment), December 17, 2012

SELECTED INVITED TALKS

Video is linked for the two talks below. Complete list on my website.

- Wolfram Data Summit: Leveling the Playing Field for Cancer Genomics Fairfax VA (Sept 22 2016)
- Festival of Genomics: Precision Medicine in the Million Genome Era Boston MA (June 29, 2016); San Diego CA (Sept 20, 2016)