~ Call for Book Proposals ~
Springer Series on
Challenges in Machine Learning

The Springer Series on Challenges in Machine Learning

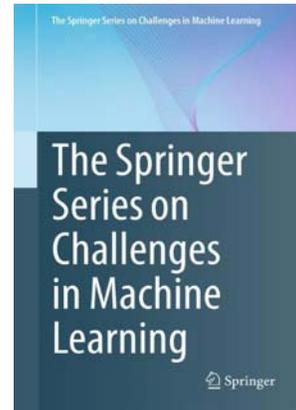**The Springer Series on Challenges in Machine Learning**

Series Editors from ChaLearn (www.chalearn.org):

Hugo Jair Escalante, ChaLearn, USA & INAOE, Mexico
Isabelle Guyon, ChaLearn, US & Université Paris-Saclay, France
Sergio Escalera, ChaLearn, USA & University of Barcelona, Spain

Aims and Goals:
The books in this innovative series collect papers selected by successful competitions in machine learning. They also include analyses of the challenges, tutorial material, dataset descriptions, and pointers to data and software. Together with the websites of the challenge competitions, they offer a complete teaching toolkit and a valuable resource for engineers and scientists.

Specific Topics:
This series encourages proposals on cutting-edge science, technology and best practices including (but not limited to) the following topics.

Methods:
- Novel or atypical challenge protocols, particularly relating to gaming and education.
- Novel or atypical challenge protocols to tackle complex tasks with very large datasets, multi-modal data, and data streams.
- Methods and metrics of entry evaluation, quantitative and qualitative challenges.
- Methods of data collection, "ground-truthing", and preparation including bifurcation/anonymization, data generating models.
- Teaching challenge organization.
- Hackatons and on-site challenges.
- Challenge indexing and retrieval, challenge recommenders.

Theory:
- Societal of psychological studies of theories about gaming and education.
- Experimental design, size data set, data split, error bounds, statistical significance, violation of typical assumptions (e.g. i.i.d. data).
- Game theory applied to the analysis of challenge participation, competition and collaboration among participants.
- Diagnosis of data sanity, artifacts in data, data leakage.

Implementation:
- Re-usable challenge platforms, innovative software environments.
- Linking data and software repositories to challenges.
- Security/privacy, intellectual property, licenses.
- Cheating prevention and remedies.
- Issues raised by requiring code submission.
- Challenges requiring user interaction with the platform (active learning, reinforcement learning).
- Dissemination, fact sheets, proceedings, crowdsourced papers, indexing post-challenge publications.
- Long term impact, on-going benchmarks, metrics of impact.
- Participant rewards, stimulation of participation, advertising, sponsors.
- Profiling participants, improving participant professional and social benefits.

Applications:
- Challenges as an educational tool.
- Where to venture next: opportunities for challenge organizers to organize challenges in new domains with high societal impact.
- Successful challenge leading to significant breakthrough or improvement over the state-of-the-art or unexpected interesting results.
- Rigorous study of the impact of challenges, analyzing topics and tasks lending themselves to high impact machine learning challenges.
- Challenges organized or supported by Government agencies, funding opportunities.

Book Proposals:
Proposals will be reviewed by the Series Editor, with additional reviews from independent reviewers when appropriate.

Submit your Volume ideas to: **ciml@chalearn.org**.
Include the following information:

- **Volume Editors:** (full postal address with email)
- **Title** of Book:
- **Source of original contents**:
- A proposed **Table of Contents**:
- Describe the **contents, aims, and importance of your challenge**, What will the material cover? What is its purpose? Which new results, methods, information or chapters are of particular interest?
- List 3-5 **key features** of your book and their corresponding **benefits** to readers.
- Provide a minimum of **15 keywords** that might be used in a Web search for your book.
- Are there other works of similar content and level presently on the market?

Springer Series webpage:

http://www.springer.com/series/15602

Springer Publishing Editor: Melissa Fearon, Senior Editor
melissa.fearon@springer.com

Forthcoming Titles:
- **Neural Connectomics Challenge,** Editors: Demian Battaglia, Isabelle Guyon, Vincent Lemaire, Javier Orlandi, Bisakha Ray, Jordi Soriano ISBN: 978-3-319-53069-7
  www.springer.com/978-3-319-53069-7

- **Gesture Recognition Challenges,** Editors: Sergio Escalera, Isabelle Guyon, Vassilis Athitsos