



# Inventions represented at Danish IP Fair 2018

## Digital and ICT

This document contains one-pagers for all inventions within **Digital and ICT** presented at the Danish IP Fair 2018. You can use this document to identify meeting partners at the event. Each invention is marked with a unique ID at the top right of the page. Use this ID to look up and book a meeting with the inventor(s) at the Danish IP Fair website - [www.dipfair.dk](http://www.dipfair.dk).

The document will be updated regularly in the period February-April, so ensure to re-visit the website for the newest version.

For further guidelines regarding meeting bookings please consult the menu Matchmaking on the website.

# Journl

- Unites Patient and Clinician

# Journl

## The Challenge

Clinicians cannot trust their paper based patient reported data today. Often causing wasted consultations at the hospital

## The Solution

Journl's generic CE-marked & HL7/FHIR compliant digital registration platform.

## What makes Journl Unique



- Feedback to Patients
- Motivating Patients
- Empowering Patients
- Creating Dialogue

**DKK 6.700.000**

Expected reduction in Medicine cost per clinic (Haemophilia)



Patient Reported Outcomes with patient feedback

**73,5%**

Reduction in errors compared to paper

### Value Proposition/USP

A wide range of clinical areas are depended on data and information from patients (ie. Symptom scoring, medicine adherence and questionnaires). Today's solutions deliver poor data quality that cannot be validated by clinicians. Journl not only enables clinicians to receive validated digital data from patients on an ongoing basis, it also gives automated feedback via machine learning algorithms to patients that makes them more knowledgeable about their affliction but also gives them the ability to act on that knowledge to become a better and more motivated patient.

### Business Opportunity/Objective/Commercial Perspectives

We have so far specialized in treatment of Hemophilia, Incontinence and cancer, but working on broadening our reach to include rheumatology, neurology, COPD and diabetes. Our questionnaire product is relevant for all clinical areas in hospitals. Journl is compatible with HL7/FHIR and CE marked for easy export to other EU countries.

### Technology Description/Technology Summary

Journl's platform includes a cross platform native app for patients and a webinterface for clinicians. Behind the two interfaces is a generic backend which enables us to quickly and at low cost customize care plans and questionnaires for new clinical areas. Our patient feedback component is based on machine learning algorithms enabling feedback that actually makes a difference in patient outcomes.

### Development Phase/Current State

We have just finished a national test with hemophilia patients and are currently in the planning phase for tests within incontinence and cancer. We have a working platform ready to scale in Denmark and the EU.

#### The inventors

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#### Seeking

- Partner/Research Collaboration
- Funding/Investors

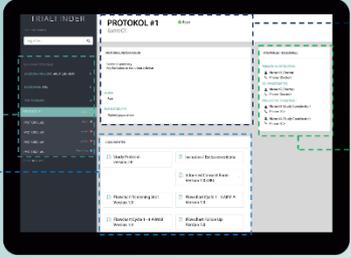


# TrialFinder.

## A Web-based Application for Clinical Trial Research

The Product:

### Simple Design



**Dropdown**

- Find your Trial easy
- Color Indicators

**Library**

- Access Trial documents

**Summary**

- Key Trial information upfront

**Site Staff info**

- Presents responsible Investigator/delegates

The Product:

### Easy & Secure Access



**PC / Mac**      **Tablet**      **Smartphone**

Available on all common platforms

Trial information accessible only through User Login.

The Objective:

### Increase Clinical Trial Activity



Expand number of local Clinical Trials!

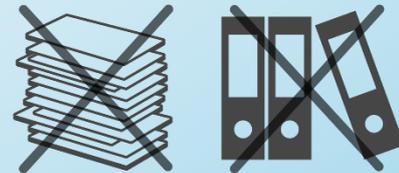
Improving Work Flow and Site Administration will increase local Clinical Trial Activity

Increasing Activity can expand the Clinical Trial enrolments and treatments

More Clinical Trial enrolments will reduce Hospital Drug Expenses

The Objective:

### Improve Work Flow



Reduce paper-dependent Procedures!

A Digital Solution will save precious Site administrative time and improve Work Flow

Turn-around time per Clinical Trial search and Update are reduced to minutes

All Updates are available to Investigator and delegates instantaneously

### Value Proposition/USP

- Accessible anytime and anywhere with up to date information. Intuitive and simple interface with easy maintenance

### Objective

- Improve local Work-Flow in Clinical Trials for High-Performance Trial Sites
- Increase Clinical Trial Activity for better Patient Treatment Options on Site
- Create Trial-Share possibilities allowing improved Patient Treatment Options across national regions
- Reduce Drug Expenses within regions as a consequence of more enrolled Trial Subjects

### Technology description

- Web-based application ([www.trialfinder.dk](http://www.trialfinder.dk)) available on PC/Mac and tablets – login restricted access
- Features: Navigation menu, Trial-status indicator, Trial-specific library, Contact Info. Administrator module

### Current state

- TrialFinder Version 1.0 (basis module): Fully operational at several sites at different hospitals

### The Inventors

Tia Vetterli Sjøgren, CTU Senior Study Coordinator  
Jens Kanstrup Kjær, CTU Manager  
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Aarhus University Hospital

### The Partners (TrialFinder Aps)

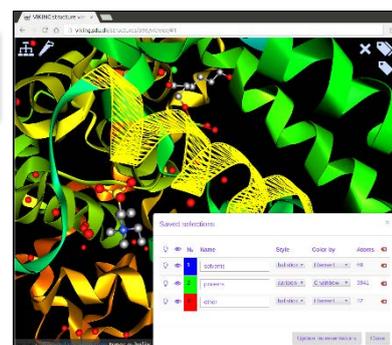
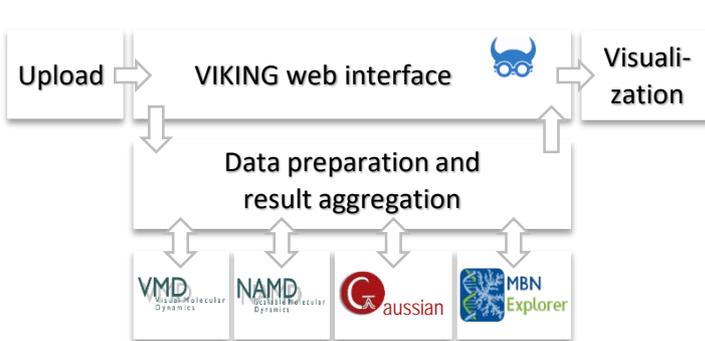
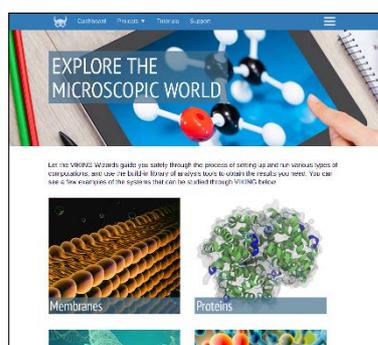
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# VIKING

## Scandinavian Online Kit for Nanoscale Modeling



### Value Proposition

VIKING lowers the barrier of entry and time investment for computational studies of biomolecular processes occurring on sub-atomic to macromolecular scales and beyond. By making it easy to set up multiscale molecular models and employ a range of industry standard tools, VIKING provides a rapid workflow and illustrates simulation results in a 3D web viewer.

### Commercial Perspectives

Potential customers are pharmaceutical and biomedically oriented companies, research divisions in hospitals as well as academic users. VIKING can provide an easy to use infrastructure based on expertise and experience. Ultimately resulting in faster and easier access to advanced computational modeling techniques employing high performance computing (HPC). VIKING makes the 'In Silico' work accessible and can be tailored to specific tasks such in areas such as drug development, nano-research etc.

### Currently, we are looking for:

- Professional partners for real-life tests and co-development
- Partners for integration of a wider range of modeling tools
- Commercialization partners

### Technology Description

VIKING is a cloud service seamlessly integrating computational tools for molecular modeling at multiple length and time scales, providing an easy and platform independent user experience. It automates the setup of modeling tasks and preparation of input data and enables running simulations through a set of existing tools, currently including quantum mechanics (QM) and molecular dynamics (MD) software packages. VIKING features a modular architecture with a rapidly expanding list of plugins and a visualization platform for exploring and analyzing simulation results on the fly.

### Current State

VIKING is already fully functional and accessible at [viking.sdu.dk](http://viking.sdu.dk). It currently features:

- Ready-to-use plugins for dynamical simulations of supramolecular complexes and calculations of quantum mechanical effects in biological systems, relying on the user's licenses for 3<sup>rd</sup>-party software
- A setup-option that allows use of supercomputers for simulations (e.g. the Danish national supercomputer Abacus 2.0)
- A sophisticated visualization toolkit

A plugin tailored for drug discovery is currently under development..

### The inventors

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# High-Performance Spreadsheets (HPS)

Setup functions without Visual Basic / Increase calculation performance with parallel processing



## Value Proposition/USP

Modern spreadsheet software has two fundamental limitations: First, extension of the spreadsheet function catalog must be coded (for instance in Visual Basic), hence domain experts building computational models must either be able to code or rely on programmers to code the desired additional functionality making it slow and expensive. Second, larger spreadsheets, especially those extended with coded functions, are slow to calculate. HPS technology allows users to define their own functions (using familiar spreadsheet terminology). And through parallel processing calculations can be completed up to 20 times faster on standard desktop computers.

## Business Opportunity/Objective/Commercial Perspectives

Spreadsheets are the main analysis tool for knowledge workers and enjoy a huge user base. HPS will especially appeal to companies who require complex modelling by domain experts. Typical industries will include Finance, Research, Engineering, Manufacturing, etc. and despite making current modelling more efficient may potentially also substitute tools such as MatLab or more dedicated analysis packages.

## Technology Description/Technology Summary

HPS technology makes it possible to define new functions directly in the spreadsheet using cell references and simple operators. Additionally, the technology automatically detects parts of a spreadsheet that can be computed in parallel and uses the computers existing multiple processor units to run the computations.

## Development Phase/Current State

Prototype software for formula implementation has been developed over a number of years and has proven useful in a software research context. The performance boost from parallel processing is based on recent research which will conclude in the first half of 2018.

### The inventors

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### Seeking

- Market opportunities/analysis
- Business partners
- Technology partners
- Funding/Investors

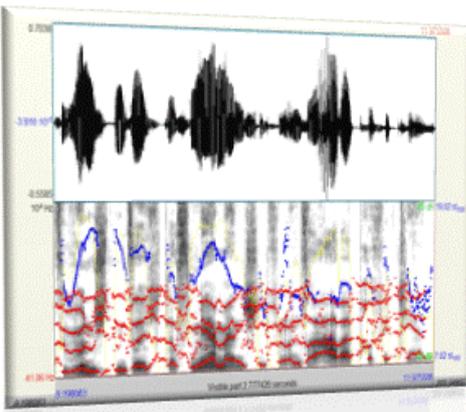
The potential patentability or utilization of the software copyrights will be investigated in the spring of 2018.



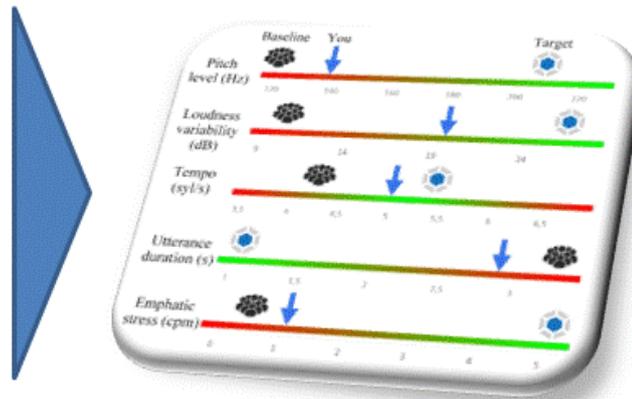


# Ay Charisma

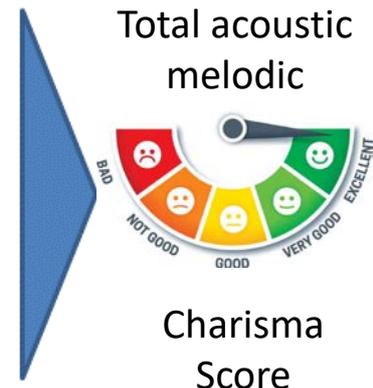
Factors identified – Eloquence quantified – Performance rectified



Speech-signal decomposition



Analysis, diagnosis, profiling



Assessment & advice

## Value Proposition

We live in a world in which the borders between politics and business and managers and celebrities get blurred, and in which SMEs and entrepreneurs become key drives of national economies and wealth. In short, the ability to present your ideas and convey your thoughts in a charismatic way to employees, investors, and the general public is probably more important than ever. Voice is a key factor of perceived speaker charisma, but was so far analyzed, described, and learned solely in vague, impressionistic terms.

There is a solution now that sets a new standard in the whole field of rhetoric training! By decomposing and the acoustic speech signal and analyzing, evaluating, and weighting a selection of local sound elements and holistic voice settings, an integrated acoustic-melodic charisma score can be calculated. It provides the learner of the first-ever objective voice assessment and can additionally offer tangible and precise suggestions on what to improve in order to gain the fastest possible increase in charisma.

## Commercial Perspectives

In business, politics, and pedagogy this will prove an invaluable tool for getting your message across loud and clear and for becoming a new leadership personality in front of your subordinates. But also for people working in management in both private and public sector enhancing communication skills is highly relevant, not least because conveying charisma stimulates creativity and, thus, innovation.

## Technology Description

The technology consist of a web-enabled set of services that allows its user to upload soundbites together with a set of carefully selected metadata. Based on the technology's automated analysis, key parameters are calculated and combined in a self enhancing model to the total acoustic-melodic charismatic score. The GUI for the technology can run on various platforms such as smart/mobile devices and web-browsers. Providing a vast array of applications for the technology in multiple settings, including integration in other products.

## Current State

A test system is currently being developed and used for extended testing of the analysis, integration, and scoring models that have already been tested in a semi-manual version on numerous training-sessions around Europe.

## The inventors

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## Seeking

- Funding/Investors
- Licensee
- Partner/Research Collaboration

Patent pending



# modl.ai

Developing advanced artificial intelligence that decides and responds like humans

Behavior simulation can assist:



construction/architecture/design (e.g. AutoCAD)



digital games



digital and physical retail optimization



autonomous vehicles development



## Value Proposition/USP

Simulating human experience lets us test and optimize software before we invest, build, and deploy.



Optimize for different users or groups of users



Support design during development



Locate errors, bugs, exploits, and user experience caveats

## Business Opportunity/Objective/Commercial Perspectives.

We are building user models - artificially intelligent bots that simulate human behavior. This can provide value when testing virtual and physical products and services such as online stores, games, webpages, and real-world retail locations. Anywhere where human behavioral patterns can impact the profit, performance, or safety of an environment, user models can provide a significant value-add. Using our models, we can simulate human behavior and predict spending and movement, and use this information to optimize e.g. online store recommendations, mobile game events and probabilities, and even physical store layouts.

## Technology Description/Technology Summary

We develop models of human behavior for simulated environments. We teach AI agents to behave like humans, learning from demonstration and datasets for integration into simulation engines. The methodology is called procedural personas and is backed by dozens of publications and a pending patent. This technology builds on the methods that have recently been used to make drastic progress in game-playing AI (e.g. Google's AlphaGo) and combines it with insights from behavioral economics and the psychology of bounded rationality.

Our team includes world-leading experts in simulating human behavior and decision making with members from IT University of Copenhagen, Northeastern University, University of Malta, and New York University.

## Development Phase/Current State

Currently reaching out to potential customers. Target partners and customers are simulation and game platform holders and end-users in the game and the retail industry. We are in partnering talks with Unity (DK), Silicon Studios (JP), and Yokozuna Data (JP).

### Team

Sebastian Risi, Julian Togelius, Benedikte Mikkelsen, Georgios N. Yannakakis, Christoffer Holmgård, Lars Henriksen, Antonios Liapis

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### Seeking

- Business partners
- Funding/Investors

Patent application filed. PA 2017 70681.

# SHANNON Cyber Immune System

Making secret keys and critical data immune to Cyber Attacks



## Value Proposition/USP

SHANNON CIS (Cyber Immune System) offers software developers, designers and architects a well documented and structured way to add advanced cryptographic library to their software applications making the software, app and or product immune to cyber attacks. Often keys are global (the same for all products) meaning that once the intruder has cracked one they will have access to all keys. With Shannon CIS each key is different thus minimizing the damage they can inflict and key parts of the technology is patent-pending in a corporation with SONY Corp. and DTU.

It is a fact that hostile intruders will penetrate the perimeter despite advanced firewalls, end-point anti-virus, -malware and -ransomware as these all assumes and detects already known protocols – even orientational disciplines cannot stop the attackers from penetrating.

When they do companies must protect the secret keys in key assets, controls and/or products in order to avoid the severe consequence as we have seen in recent years.

That is exactly the job of Shannon CIS. The libraries are probably the world's most advanced and offers the best protection to companies in a variety of segments. Today we help protect and secure Autonomous Buses, Power Stations, small Health devices, Blockchain and more.

## Business Opportunity/Objective/Commercial Perspectives

Be part of the further development (R&D and globalization) of Shannon CIS. Currently focused on specific applications, but broadly applicable in f.inst. Mobile Apps and IoT / IIoT. Currently customer financed through advanced consultancy cryptographic work towards large companies and government and institutions.

## Technology Description/Technology Summary

Not to be disclosed. Please see Figure Above.

## Development Phase/Current State

Patent-pending

## The inventors

## Contact Information

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## Seeking

- Funding/Investors
- Licensee
- Partner
- IPR Sale

Intellectual property rights (1-2 lines) Ansøgningsnummer/publikations nummer/prioritetsdato