Introduction to ACRYL inc.

WE PROVIDE ;
the platform for building your own AI.
Table of Contents

1 Introduction to Acryl

2 Jonathan™, the AI platform
1 Introduction to Acryl
### ACRYL inc. at a glance:

<table>
<thead>
<tr>
<th>Company</th>
<th>ACRYL Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business areas</td>
<td>Artificial intelligence / Big data software</td>
</tr>
<tr>
<td>CEO</td>
<td>Jin Park</td>
</tr>
<tr>
<td>Employee</td>
<td>81 (as of November, 2019)</td>
</tr>
<tr>
<td>Investors</td>
<td>LG electronics. / SK holdings C&amp;C / Medici investment / Bluepoint partners</td>
</tr>
<tr>
<td>Founding</td>
<td>March, 24th, 2011</td>
</tr>
<tr>
<td>Homepage</td>
<td><a href="http://www.iacryl.com">http://www.iacryl.com</a></td>
</tr>
<tr>
<td>Telephone</td>
<td>+82 (0)2 557 4958</td>
</tr>
<tr>
<td>Business presence</td>
<td>Cheongdam Bldg, 704, Seolleung-ro, Gangnam-gu, Seoul</td>
</tr>
<tr>
<td></td>
<td>Headquarters : 11F, AI lab : 7F</td>
</tr>
</tbody>
</table>
Business areas:

Acryl has “Jonathan™”, the artificial intelligence platform.

**AI platform licensing**

Acryl is licensing “Jonathan™” to enterprise customers for various AI services

- AI Libraries (NER, TER, etc.)
- AI Infrastructure (JF dev, JF Ops, etc.)
- AI Tools (JIS, Zoooma, Bengal, etc.)

**AI system integration**

AI system integration based on Jonathan™ (AI-as-a-Service)

- AI system integration service for customers who want AI systems to be implemented in their business.
- Big data processing service for AI service workflow.
- Professional consulting service for customers’ AI service dev. plan

**AI application development**

Collaboration based on our experiences on various AI projects

- ML based Chatbot framework service for CS (customer satisfaction)
- AI diary service, HAWAYOU
- Outlier detection by analyzing the formal data from the manufacturing process

---
Clients and partners;

Companies

LG 전자  Samsung  LG CNS  Microsoft  THE REAL LIFE COMPANY

우리은행  KDB산업은행  KYO WON 교원  ShinhanCard  SK

HYUNDAI  SK planet  Cigna  라이나생명  롯데손해보험

KT  KB손해보험  alticasta  wadiz  wised

Public institutions

과학기술정보통신부  문화체육관광부  산업통상자원부  KETI  전자부품연구원

TIPA  중소기업기술정보진흥원  인터넷진흥원  한국과학기술정보통신협회

(aur) 건축도시공간연구소  EX 한국도로공사  kidp 한국디자인진흥원

Partners

BEETHAM MEDICAL CENTER  KBIOHEALTH  SNUH

College of Pharmacy  SK  주영화조제통학

Copyright 2019 ACVFL. All rights reserved.  |  STRICTLY CONFIDENTIAL
Company history (2018 ~ presence);

2019
19.12 Won the Minister’s award of Science and ICT at the ‘SW R&D performance presentation’ (for AI platform)
19.11 Contracted a MOU with KAVA(Korean Association against Violence and Abuse) for ‘the development of talent discovery service for children’
    Contracted with KB Insurance for ‘Prediction VoC of insurance call center’ (Pilot)
    Contracted with SK for ‘LINA(Cigna’s Korean subsidiary) 2nd QA Automation business (Deep Learning Model)’
    Won the Venture Business Association President’s Award at the ‘2019 Happy SME Management Awards’
19.10 Contracted with KT(Korea Telecom) for ‘the development of CSI solution’
19.08 Contracted with Wadiz for ‘the advancement of Wadiz Platform’
19.05 Won KRW 1 bil. multi modal data processing dev. project from NIA(National Information Society Agency)
19.03 Contracted with Samsung electronics for ‘Big data analysis system(FIND 5.0)’
    Attracted capital increase by issuing new stocks from LG electronics
19.02 Contracted with KT(Korea Telecom) for ‘the development of the intelligent recommendation engine for IPTV’
    Contracted with KAI for ‘big data platform development(pilot)’

2018
18.12 Won the Minister’s award of Science and ICT at the ‘2018 Korea ICT award’ (for Artificial intelligence)
18.12 Selected as the SME company of ‘2019 youth-friendly hidden champion’, by Minister of Labor
18.12 Won the most prestigious award at the ‘The 13th Korea Internet Award’
18.12 Selected as the company for the project of ‘development of the next-generation early intervention platform for ADHD and ID’ with SNU Hospital by Ministry of Trade, Industry and Energy(MoTIE)
18.11 Won the Minister’s award of Science and ICT at the ‘2018 Korea SW R&D Awards’
18.08 Attracted strategic investment from SK holdings C&C
18.08 Selected as the Korea leading company for technology innovation at the ‘2018 Korea leading company award’
18.06 Selected as the excellent venture business by Korea venture business association(KOVA)
18.03 Attracted strategic investment from LG electronics
18.02 Contracted a MOU with Omni C&S inc. for ‘the development of the emotional intelligence-based counselling platform’
18.02 Contracted with Bestian Hospital Foundation for ‘AI-based healthcare service’
18.01 Won the IF design award for ‘HAWAYOU’, a AI-based B2C diary service (for Social Media)
Organization:

CEO

Tech Committee
- Al biz. bu. 1
  - Jonathan Experience Division
  - Jonathan Frame Division
- Al biz. bu. 2
  - Jonathan Brain Division
  - Empathy Intelligence Lab
  - Jtools Division

Jonathan Audit Team
- Biz. support div.
  - Finance & Accounting Team
  - HR & General Admin Team

Total 81 employees
Jin Park, PhD | CEO
PhD Computer Science, KAIST
Adjunct professor, Computer Engineering in SKKU
CEO, WRG Inc.
Grand prize in venture entrepreneurship competition (2001)

Jonathan Kim | CTO
BA Computer Science, KAIST
CTO, WRG Inc.
CTO, Next Papyrus Inc. in Silicon Valley.
Researcher, Saerom technology

Green Lee | CMO
MS Industrial engineering, KAIST
Director, Lab of Biospace Inc.
Manager, Medison Inc.

Kay Ko, PhD | CIO
PhD Computer Science, KAIST
Manager, MCS logic inc.
Researcher, WRG Inc.

Young Kwon | CFO
MS Economics, Yonsei Univ. (GISIS)
AICPA certified
CEO of NMI Korea
Finance Director of Microchip and Atmel

Harvey Oh | CAIO
PhD candidate Physics(Math), KAIST
Researcher, ACRYL inc.
Researcher, graduate school of Nanoscience and Technology, KAIST

Ik-Jun Yeom, PhD | Technical Advisor
PhD Computer Science, Texas A&M Univ.
Professor, Computer Engineering in SKKU
Associate professor, Computer Science, KAIST
Mission & Vision:

“Implementing ultimate technologies for empathic AI”

- World-best human empathic AI platform
- Development and operation for the services based on empathic AI
- Partnerships with other AI platforms

- Integration of related Natural Language Understanding (NLU) technologies
- Processing knowledge and constructing knowledge-base
- Based on deep-learning / few-shot learning / unsupervised learning
- Integrated with big data infrastructure solution

- Natural Language Processing (NLP)
- First version of emotion-recognition engine has been released based on statistical machine learning techniques
2

Jonathan™, the AI platform
Total solution for enabling the customer to build ‘what they want using AI’

**AI infrastructure**
- AI service development & operation based on GPU utilization

**AI Libraries**
- Highly-abstracted AI libraries for processing text, image & audio data based on deep learning

**AI Tools**
- Utility software for collecting and annotating data based on big data technology

Enabling execution with high performance

Facilitating effective development and training for the target intelligence
### Jonathan™, the AI platform: product portfolio

**from business logic to infrastructure**

<table>
<thead>
<tr>
<th>AI Infrastructure</th>
<th>AI Libraries</th>
<th>AI Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>JF Dev</strong></td>
<td><strong>JB NLU</strong></td>
<td><strong>Bengal</strong></td>
</tr>
<tr>
<td>Development framework for deep learning-based s/w</td>
<td>Natural Language Understanding</td>
<td>Engine for real time data collecting with big data technology</td>
</tr>
<tr>
<td><strong>JF Ops</strong></td>
<td><strong>JB EMAI</strong></td>
<td><strong>JIS</strong></td>
</tr>
<tr>
<td>Management framework for deep learning-based s/w</td>
<td>Empathetic AI</td>
<td>Jonathan intelligence studio (JIS) is the most advanced data annotation s/w supporting multi modality</td>
</tr>
<tr>
<td><strong>JF Cloud</strong></td>
<td><strong>JB Chat</strong></td>
<td><strong>Zoooma</strong></td>
</tr>
<tr>
<td>GPU-specific management framework for cloud environment</td>
<td>Chatbot Framework</td>
<td>Social analytics solution based on Jonathan™</td>
</tr>
</tbody>
</table>

**AI Libraries**
- **JB NLU**: Neural net models based on BERT for implementing language intelligence with high-performance.
- **JB EMAI**: Neural net models for emotion recognition using multi-modal data fusion (text, image, audio, etc).
- **JB Chat**: Development framework for chatbot implementing personalized services (e.g. recommendation).
Jonathan Frame is an integrated deep learning infrastructure supporting the whole process of building AI application services including development, learning, deployment and efficient management of the resources (e.g. GPUs and memories) in the server environments.

**JF DEV**

; JF Development

- Multi GPU function:
  - accelerating, integrated memory,
  - multiple node connect, scheduling
- Development, a familiar environment for engineer
- GitHub ... etc
- Apply for various ML frameworks

**JF Ops**

; JF Operation

- Multi GPU function:
  - accelerating, integrated memory,
  - multiple node connect, scheduling
- Optimization for business process
- Automate for operating AI services
Jonathan Brain is an organized system of various deep-learning models and their relevant utilities for understanding text, audio and image in terms of the meaning of words, emotion, intent, TPO (time, place and occasion), and etc.

Ultimate Empathic AI

JB Chat
; JB Chatbot Framework
AI system supporting the implementation of the natural conversational services including
The professional question answering

JB EMAI
; Empathetic AI
Deep learning system consisting of the libraries used for recognizing the user’s emotion in the facial expressions, Voices and the text from the voices in a multimodal way

JB NLU
; Natural Language Understanding
Deep learning system consisting of the libraries used for text understanding
Jonathan eXperience Suite
AI Demos Online
대화를 주고 받으면서 직관적으로 챗봇을 만듭니다.
롯데

체팅하기

소식

정보

병원 > 종합병원

이 정보는 플러스친구 운영자가 등록한 정보입니다.
Jonathan TOOLS;

Jonathan Tools is a set of utility software for collecting and annotating data based on big data technologies.

**JT Zooma**

; Social Text Big Data Mining Tool

Social analytics system supporting keyword/trend/emotion analysis for the given keywords with web-based interfaces.

**JT JIS**

; Jonathan Intelligence Studio

Social for authoring and annotating the training data for deep learning models with web-based interfaces.

**JT Bengal**

; Big Data Crawling

Data crawling engine for the distributed data.
## Train List

Showing 1 to 1 of 1 entries

| No. | Title     | Date          | Status       | Tensorboard | Train Control |
|-----|-----------|---------------|--------------|-------------|---------------|---------------|
| 1   | train 0925 | 2019-09-25 02:31:54 | 전처리완료 | show        | train start   | train stop    | checkpoints   | X             |
Jonathan™, the AI platform; technical competitiveness

Jonathan is the market-proven platform promising an easy-way for customers to adapt to reap the AI’s benefits

1. Integration of understanding and emotion-centric intelligence technologies
   - Deeply recognizing the named-entities/personal attributes/topic classifications and also personal emotions
   - Providing the empathy generation intelligence based on emotion recognition

2. Originally designed and highly-tuned neural networks
   - Robust natural language processing (NLP) technology which is well tolerable for asyntactic text
   - Specially trained for spoken expressions and slangs used in social media
   - Providing the multi-modal data processing for each phase of data preparation, labeling and training

3. Total service covering all the development phases for various AI services
   - Well organized data preparation using Jonathan Intelligence Studio
   - Well defined AI Platform from AI libraries(Jonathan Brain) to AI infrastructure(Jonathan Frame), even with AI tools(Jtools)

4. Efficiently utilizing multiple hardware instances(GPU) to maximize the training and service performance
   - Clustering multiple GPUs in the different hardware/network
   - Providing systematic monitoring the dataset, training progress and training / deployment history, etc

5. Market-proven experiences
   - Collaborating with SK holdings C&C for AI service development to the various financial companies
   - Adapting emotion intelligence into smart appliances in LG electronics
<table>
<thead>
<tr>
<th>Theme</th>
<th>Technical Feature</th>
<th>Holding License</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration, Application, PCT Application</td>
<td></td>
<td>19 Registration, 16 Application, 2 PCT Application</td>
</tr>
</tbody>
</table>