KineticCortex

Utilizing AI for the Early Diagnosis of Cerebral Palsy in Infants

Mission

Welcome, we are **Kinetic Cortex** and our mission is to revolutionize the early diagnosis of cerebral palsy in infants through innovative technology.
We are committed to leveraging Deep Learning and Computer Vision to develop cutting-edge tools that provide accurate and timely assessments of neurological health. We aim to bridge the gap in specialist availability and ensure that every child, regardless of location, has the opportunity to benefit from early therapeutic interventions.

Our ultimate goal is to improve the quality of life for children worldwide by enabling swift, effective, and equitable access to essential diagnostic and treatment services.

Cerebral Palsy (CP) is not a disease, but a syndrome consisting of multiple disorders that result from brain damage, most often occurring during fetal development or the perinatal period. The primary causes of CP include ischemia, hypoxia, infections, and intracranial injuries. The first symptoms of cerebral palsy can be observed between the 6th and 12th month of a child's life and mainly include muscle paralysis, asymmetric muscle tone, and impaired coordination abilities.

The Prechtl Method

A neurologist can only make a definitive diagnosis when the child is at least six months old (usually around one year), while with the Prechtl method, it is possible **as early as three months after birth**. This is **extremely important** because the earlier the child's rehabilitation begins, the greater the chances of improving their quality of life.

The biggest Problem

The primary problem we aim to address **is the limited availability and accessibility of early diagnostic tools and specialist** care for detecting cerebral palsy (CP) in infants.

Time

Late diagnosis

Many children miss the critical window for early therapeutic interventions, which could otherwise mitigate the severity of CP-related disabilities.

Tools

Lack of digital solutions

Currently, physiotherapists operate using data recorded by cameras, but they analyze the recordings manually in an analog manner.

Deep Learning

We aim to leverage **Deep Learning and Computer Vision** technologies. By utilizing advanced neural networks and image processing algorithms, we can automatically evaluate the quality of **general movement patterns** captured through video recordings.

Implementing these cutting-edge technologies can significantly enhance the precision and efficiency of early diagnosis, enabling timely interventions that can improve the quality of life for affected children by mitigating secondary complications such as contractures and movement limitations.

Our Products

We plan to develop two types of products to support the early detection and intervention of cerebral palsy.

Mobile App

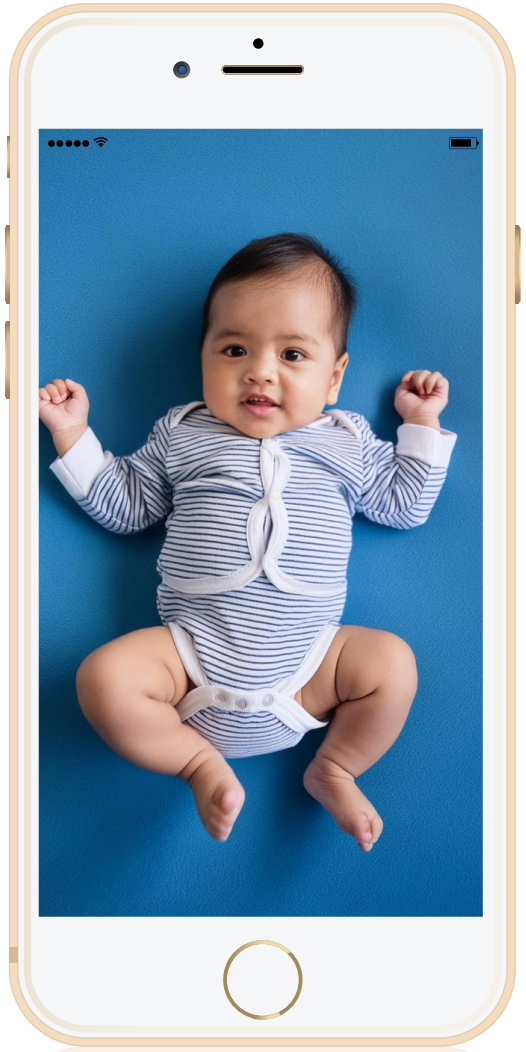
designed for parents of infants in high-risk groups. This app will allow parents to record and analyze their child's movements using their smartphones

Hospital-grade device

to perform comprehensive assessments of infants' motor functions in clinical settings, ensuring accurate and early diagnosis.

Mobile App

The first product is **a mobile applicatio**n designed for parents of infants in high-risk groups. This app will allow parents to record and analyze their child's movements using their **smartphones**, providing an accessible and convenient tool for early detection of potential neurological issues.



The initial result within 15 minutes

Designed for:

Android and iOS

Hospital Device

The second product is **a hospital-grade device** intended for screening purposes. This advanced medical device will utilize deep learning and computer vision to perform comprehensive assessments of infants' motor functions in clinical settings, ensuring accurate and early diagnosis. Both products aim to enhance early intervention strategies..

With own GPU and processing power

Embeded Software.

The Goal

Our goal is to ensure that every child globally has equal access to this method through our application, allowing them to benefit from early therapy.

Celebral Palsy in numbers

Birth Statistics in Europe

4 mln

per year

In Europe, approximately 4 million babies are born each year

Risk Groups for Cerebral Palsy

37

before 37 weeks of gestation

Other risk factors include low birth weight (especially those under 3 pounds, 5 ounces), multiple births (e.g., twins, triplets), maternal infections during pregnancy, and birth complications such as hypoxic-ischemic encephalopathy (HIE), intracranial hemorrhage, and meconium aspiration syndrome (CDC) (SpringerOpen)

The prevalence of CP

1.1 – 1.7

per 1,000 live births

This translates to about 1 to 4 children per 1,000 live births developing CP, which is consistent with global statistics

The Founder & CEO

Edyta Rowińska

- 30+ years of experience with CP
- 22+ years of experience with the Prechtl Method

A Founder and a Board Member of Kinetic Cortex Company.
Physiotherapist and an enthusiast of modern medical technologies. A businesswoman who has taken on the challenge of tough R&D.

Co-Founder

Sebastian Łuczak

CTO

IT expert with over 25 years of experience, involved since 2007 in classified projects for institutions such as NATO, the European Commission, and EU agencies. Since 2019, focused on R&D projects leveraging Machine Learning and Computer Vision.

Co-Founder

Rafał Kijonka

Enterpreneur, Investor and Manager

Professional experience in management, IT, Sales & HR business area, business development and outsourcing service. Strong business and strategy awareness & client orientation.

Team Members

Scientists onboard

Jan Mazela

Professor Doctor Habilitated in Medical Sciences

A specialist in pediatrics and neonatology, The president of the Polish Society of Perinatal Medicine and is affiliated with the Department of Neonatology at Poznań University of Medical Sciences. 11 years of experience working in the USA.

Paweł Antoni Krajewski

Doctor Habilitated in Medical Sciences

Head of the Neonatology and Neonatal Intensive Care Unit Clinic at the Institute of Mother and Child in Warsaw

Piotr Graszka

PhD in Image Processing

Machine Learning Researcher/Engineer with PhD in Computer Science specializing in Deep Learning, Computer Vision, Image Processing and Pattern Recognition

Our Timeline

Jan 2024

Kinetic Cortex Comany Registration

March 2024

NCBR – Application for a Grant of Over **EUR 5 Million**

NCBiR
The National Centre for Research and Development

Oct 2024

Kinetic Cortex has been granted patronage by the

- **Mother and Child Institute**
- **Institute of the Healthy Polish Mother Center**

Kinetic Cortex (as one 30 other Companies) has been selected for a prestigious **EIT Health Catapult** - **European Innovation Programme**

ABM
Medical Research Agency

PARP
Polish Agency for Enterprise Development

Application for Grants

- PARP - **EUR +12 Million**
- ABM - **EUR +6,5 Million**

Q4 2025 Years

Mobile App Application and
Hospital-Grade Device

Q1 2026

Go to market

Contact

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