



# András Sebők

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## Artificial Intelligence-driven bakeries

#PrO4Bake  
campdenbripage



Main product:  
PrO4Bake

Aim:  
Optimising bakeries' production through better forecasting

- Generated funding:  
EUR 957 245
- Challenge:  
Food waste reduction and energy efficiency
- Partners:  
Siemens, Campden Hungary universities of Hohenheim, Turin, Aarhus and Lund, CSIC and IAFR PAS



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### THE PROJECT

#### The idea

PrO4Bake is an AI-driven tool that optimises the production planning for SME bakeries through the combined use of a demand forecasting tool and a production scheduling optimisation tool.

#### Inspiration

I have vast experience in the European food industry, collaboration with SMEs, and the use of ICT and mechatronics for food industry innovation. I have always strongly believed in the digitalisation of food processing as a way to optimise the operating model of SMEs in many respects.

#### Unique selling points

PrO4Bake addresses the challenges of high food waste caused by unsold and stale products in bakeries by optimising production according to demand. It leads to considerable economic advantage for SMEs who obtain assistance through training and consulting services at a fee correlated to their expected gains.

#### Societal impact

The adoption of PrO4Bake prompts savings in energy, raw materials, and maintenance costs, as well as a reduction in bakeries' ecological footprint and food waste. It will also contribute to the development of a digital culture in the food manufacturing industry.

#### EIT Community support

The EIT supported the project from scratch. The idea was originally pitched at an SME workshop organised by EIT Food, which also provided funding and inspiration through its "Application of Industry 4.0 in Food processing" training programme.

#### THE NOMINEE

##### The beginning

The project was triggered by interactions between SME bakeries looking for energy efficient and sustainable solutions, and researchers in optimisation algorithms, who met at an EIT Food SME workshop in Hohenheim.

##### Partnerships & Teamwork

The Hohenheim Research Center of Bioeconomy leads the project. Siemens, Hohenheim and the University of Turin are developing the algorithms and optimisation procedures. The other research partners and Campden Hungary collect process and consumer data from bakeries. The consumer-related research in PrO4Bake is coordinated by Aarhus. Campden Hungary conducts the training and consulting services.

##### Rewarding moments

The enthusiasm of one of our SME bakery partners during the first explanation of the concept, the high-ranking of our first year proposal, and our nomination for this very award, were all rewarding moments.

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