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## Job Description – Quantitative Geneticist (Senior/Junior)

**Location:** Oxford, UK or Hørsholm, Denmark

**Type:** Full-time, permanent

**Job Ref Nr:** SYN-QG-01/20

**Reporting To:** Haja Kadarmideen, Chief Technology Officer

Synomics aims to transform the efficiency of the agri-food industry by improving animal and crop production efficiency, and the economics and sustainability of the entire production value chain for multiple species. Our platform is a revolutionary advance in the analysis of high-throughput genotypic, phenotypic and environmental data to accurately measure and analyse protein production efficiency, health, accelerate genetic progress, and deliver more sustainable protein production from animals and plants. We're a small but rapidly growing AI enabled genomics, breeding and precision agriculture company with global ambition and partnerships with some of the largest international livestock breeding companies and research institutes.

We're located near Oxford, UK and in Hørsholm (near Copenhagen), Denmark and were founded by a diverse team of highly experienced animal production & health, genomics, breeding, bioinformatics, AI and computer science leaders.

We have a fantastic opportunity for a Senior or Junior Quantitative Geneticist to join our team, reporting to our CTO, Professor Haja Kadarmideen. We are looking for someone who is comfortable working with one or more livestock species (e.g., dairy & beef cattle, pigs, companion animals and poultry) datasets both commercial and academic. The ideal candidate will have strong expertise and experience in quantitative genetics, statistical genetics, genomic breeding value estimation / genomic selection in animal / plant breeding and large-scale genome-phenotype association studies (GWAS) using standard as well as new computational tools (e.g. AI/machine learning).

The main responsibilities will involve identifying and interpreting novel associations within large, multi-dimensional animal/crop phenotypic, pedigree and genetic / genomic datasets. These will include genome sequencing and/or genotype datasets as well as deep phenotypic data such as feed intake, growth, fertility, activity, imaging, longitudinal disease episodes, electronic welfare records, pedigree & breeding records and other phenotype datasets. The ideal candidate will have a keen interest in creating insight and value from complex data from animal/crop breeding organizations and experiments, a good knowledge of animal/crop biology and a passion for identifying and answering questions that help us solve real-world problems and build the best products.

This is an exciting opportunity to help shape the direction of the business as a key member of the team and to help accelerate technology change, improve animal production and reproduction efficiency, health & welfare and reduce carbon emissions across a globally significant industry.

## Responsibilities

- Solving real-world problems by using appropriate analysis of large breeding, genomic and other omics data collected in field / farms and in experiments across multiple animal and crop species
- Ascertain quality of design of experiments and collected data (often array based), conduct initial QA & QC of phenotype/disease, pedigree, genomic datasets, do relevant statistical analyses and normalization and identify target SNPs and genes via statistical genetics, quantitative genetics, bioinformatics and AI tools
- Developing scripts, workflows and pipelines to automate high-quality analysis of genomics and phenotype datasets
- Performing biological interpretation of results and targets produced by statistical genetics, quantitative genetics, bioinformatics and AI tools (e.g. GO term and pathway analyses)
- Driving the collection, cleaning and verification of new data and the refinement of existing data sources
- Analysing, interpreting and reporting the results of agri-genomics customer projects
- Testing new algorithms and products and working closely with product designers and engineers to identify and answer important product questions

This job description is not exhaustive and will be subject to periodic review. It may be amended to meet the changing needs of the business.

## Key Requirements

- MSc or PhD in animal / plant quantitative genetics or breeding or closely related field and/or 3+ years' experience in a relevant (ideally commercial) role
- Experience in working with large scale industrial phenotype / disease, pedigree and genomic databases and data capture systems to make it ready for downstream quantitative or statistical genetic modelling and genetic analyses
- Experience in genome analysis (e.g. GWAS) methods and post-analysis interpretation problems
- Experience in Genomic Prediction and Genomic selection (GS) methods (e.g. GBLUP/HBLUP and Bayesian alphabets)
- Knowledge or comfort in manipulating genome sequence datasets (WGS/WES) for GWAS or GS
- Proficiency with the use of publicly available data repositories including agricultural species (i.e. NCBI, EMBL, GTEx, OMIA, AnimalTFDB, AnimalQTLdb, Genome Browsers etc.)
- Demonstrated computational analysis experience including coding in Python and/or R in UNIX/LINUX environments
- Comfort manipulating and analysing complex, high-volume, high-dimensionality data using a range of statistical, AI and Machine Learning techniques
- A strong passion for empirical research and for answering hard questions with data
- A flexible analytic approach that allows for results at varying levels of precision
- Ability to communicate complex quantitative analysis in a clear, precise, and actionable manner

## Key Attributes

- Good communication and presentation skills with fluent English (min. of equivalent of CEFR level C1)
- Confidence to make suggestions and influence change
- Ability to work well to deadlines, while paying attention to detail and accuracy
- Ability to work in a diverse team of geneticists, data scientists, bioinformaticians, breeding specialist, software / IT specialists and business support across multiple domains/species
- Strong customer service focus and the ability to build close working relationships

- Flexible approach to working
- Personal integrity and discretion

## What We Offer

- Competitive salary with performance related bonuses
- Company pension scheme
- 25 days annual leave rising with long service
- Excellent career development opportunities in a fast-growing international organisation

## Application Process

- Please submit cover letter, your CV, and publication list (if relevant) to [jobs@synomics.ai](mailto:jobs@synomics.ai)
- Applications close on 27 April 2020
- This position is available for immediate start after interviews

Please mention the job reference number SYN-QG-01/20 in the cover letter and subject line of your email when applying.

Synomics is a collaboration between Wearsheaf Group Ltd and PrecisionLife Ltd. Wearsheaf Group directly operates, invests in and helps to develop businesses in the food and agriculture sectors. PrecisionLife is an AI enabled precision medicine company, which is ISO27001 accredited, committed to equal opportunities and operates a carbon neutral business. To learn more, visit:

<http://www.synomics.ai/>, <https://www.wearsheafgroup.com/> and <https://precisionlife.com/>.

We follow the EU right to work employment checks and you will therefore need to satisfy basic eligibility criteria/certain conditions of employment (e.g. nationality rules/right to work in EU / UK); and provide appropriate original documentation to verify ID, nationality, employment and/or academic history.

Synomics is fully committed to equal opportunities.

Here's a link to our privacy policy- <http://www.synomics.ai/privacy-and-cookies-policy/>

In this policy, you will find information about our compliance with GDPR (data protection law.) You can find how to send us a request to let you access your data that we have collected, request us to delete your data, correct any inaccuracies or restrict our processing of your data. You have the right to lodge a complaint about the way we handle your data with supervisory authority or you can contact our DPO at [GDPR@synomics.ai](mailto:GDPR@synomics.ai) for more information or concerns. We process this data for recruitment purposes only. We store all candidate data in secured file with restricted access, and we will not share it with anyone else.