Job Description – Senior Quantitative Geneticist / Breeding Specialist

Location: **Copenhagen (Denmark) or Oxford (UK)**

Type: **Full-time, permanent**

Job Ref Nr: **SYN-QG-02/20**

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 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 Quantitative Geneticist / Animal Breeding Specialist 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 breeding and large-scale genome-phenotype association studies (GWAS) using standard as well as new computational tools (e.g. AI/machine learning). Experience in breeding program designs and net merit indexes utilizing genomics (e.g. SNP, haplotypes etc) to make faster genetic gain would be an advantage.

The main responsibilities will involve identifying and interpreting novel associations within large, multi-dimensional mainly animal and poultry phenotypic, pedigree and genetic / genomic datasets but may also involve crop & aquaculture species. 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 breeding organizations and experiments, a good knowledge of animal 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

- Playing a central role in driving our innovative research projects aimed to achieve faster and higher rates of genetic gain and to extract maximum value of data from modern breeding and omics technologies
- Solving real-world problems by using appropriate QA / QC and analysis of large breeding, genomic and other omics data collected in field / farms and in experiments across livestock and poultry species
- Performing relevant genomic breeding value estimation using various industry standard genomic prediction tools (including GBLUP, ssBLUP and Bayesian methods)
- Developing or improving methodologies for genomic breeding value estimation in animals (and ideally also plant & aquaculture species) combining our Synomics discovery pipeline and existing genomic evaluation methods via statistical genetics or quantitative genetics and bioinformatic methods
- Leading efforts in total genetic merit index calculations and optimized breeding program design that will utilize genomics (e.g. gEBVs or gEPDS, proprietary SNPs and sequences, etc) to make higher genetic improvement
- Testing new algorithms and products and working closely with product designers and engineers to identify and answer important product questions
- Analysing, interpreting and reporting the results of our customers
- Lead and/or coordinate with junior team members in different projects

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

- PhD in animal quantitative genetics or animal breeding and/or 3+ years' experience in a relevant (ideally commercial) role
- Experienced in multi-trait genetic parameter estimation / variance component estimation using quantitative or statistical genetics in cattle or pigs or poultry and use of relevant software (e.g. Asreml)
- Genomic breeding value estimation (Genomic Prediction) and Genomic Selection (GS) methods (e.g. GBLUP/RR-BLUP, ssBLUP, Bayesian alphabets etc) in cattle or pigs or poultry and use of relevant software (BLUPf90 family programs, DMU)
- Experience in genotype imputation techniques and genome wide association analysis (e.g. Beagle, FImpute, GCTA, PLINK, GEMMA, snpStats) methods in cattle or pigs or poultry.
- Demonstrated skills and experience in working with large scale phenotype / disease, pedigree and genomic databases and general database management techniques, especially in cattle or pigs or poultry
- Knowledge or experience in total genetic merit index calculations and optimized breeding program design that will utilize genomically enhanced breeding values in cattle or pigs or poultry
- Demonstrated computational analysis experience including coding in Python and/or R in UNIX/LINUX environments
- 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
- Applications close on 10 July 2020
- This position is available for immediate start after interviews

Please mention the job reference number SYN-QG-02/20 in the cover letter and subject line of your email when applying.

Synomics is a collaboration between Wheatsheaf Group Ltd and PrecisionLife Ltd. Wheatsheaf 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.wheatsheafgroup.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 GDRP@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.