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January 1999
Features

Career interview: Games developer

by Kona Macphee

Andrew Wensley, Eidos Game Producer

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øóòòõøûþ þüúúü þùóíëíòøÿ þ÷ôôù ûïäÛÕÖÜáåìý !−34/+$ ýÿ
ÿôêâÜØÕÖÝéö ûøóïíðô÷ùùúý ÿùöö÷ùûþ ÿýûùöòìèêòþ üøøûÿ
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þüùùúûüÿ ÿÿýýþÿ ýùöóïíîõý
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þ÷öû ü÷ùý ûøøû þ÷õ÷ý üôòõü ýôñôü öòôý üúúý ÿþüýýûø÷ùü
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ÿøôõõøÿ þõòôù üù÷øü ÿøöû þöòöü ûôóù öñö þÿ ûôõþ
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ýûúûý þüüÿ ùõøü úõô÷ý úñïóý ýõïð÷ ùðîñù ùùòëèëù
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þôìèéïø úõóóõùþ ÿúøøúýÿ ÿûøööú ÷òôû ÿù÷ùûüþ ÿûûÿ ûøùÿ
þþýûúü ýúøùûþ ýøôô÷ý ÿþüüþ ÿûùùûûþ þöóõý þùöõùÿ ûõðíîòø
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ÿÿ ÿüûúúùùúüþÿ ÿüùøúþ ÿýýÿ þüûûüþÿÿþûúùùùúüþ þûúüÿÿÿýûùùûþ üùøùûþÿÿ ÿ ÿûõóõ÷úüü
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þüúúøøùûüûù÷õôôôõöøùúûùøöõ÷ùüÿ ýüüýÿ þüúù÷øùûýÿÿþýýüûúøùûþÿ ÿÿþýüûüþ

ÿþþþÿüúùøöôóóõøúûûûüýþýýýþþýþÿ ÿþýüûûüýüüýþþýüüûüýþýûûúüüüýþ þýýýýþþþþþ
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!).. *.(ýúöóõú '(" ùíåàßààãéóÿ ÿøóððñóöùúûýÿýýúúø÷õõøüÿÿþüûý ïÕÎÌËÊ
,*336555 íß×ÐËËÉÒ),) áÔÑÌËÊÊÊÌ ++3370 äÖÑÕô
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0#ûÜÕ× '−24657% íååâÚ×âø ôéáÖËÊÊÊÑëþ !++! ÿ .556, ýìÜÔ×âíñòõÿÿ ÷êáÞàåíú ùùÿ
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' öëãØÍËÊÊÓâíü !% ùññõù #1462(òéëï÷þ öìçåâàâë÷ ýöïíñú #%#
ÿþýþþøóïëéæååêïôùþ ýùõñííôüÿðÕÊÎÆï(*136665 òÜÕâú .250 ßÖÑÌÊÊÊÊëáû !# üãØàðúúü
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úõóóôñððñô÷úúùööøøûýÿ ýýþ þýûûûý þúú÷óìáÕÎËÍÚñ #.16. øçåõ $
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ÿú÷÷ü ÿõìçèí÷ üôïïòøûúø÷øúÿ ÿüùùûý ü÷ôóöùüûøöôõùûýþþüúùùý
þüüüþ ÿÿÿÿþüúø÷÷öõõ÷úþ üöïæÚÐÐØæø ý %/−%
üø÷úþ úóìçéïöýþûûôîìíðóóòòôô÷ý ÿýüý ýøõõøø÷õóõùý þ
ÿüúùúüÿ ÿûúûüýþÿþüûúúø÷õôõ÷û ý÷îæß×ÓÚçô
ÿü÷òòó÷ûýþ ûöñìîîôúþýùöôôôôóòòòóó÷ ÿþýýýþþþüùöôôö÷÷÷øøúüÿ
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!# ûôòòóóó÷þ ÿúððòõøøùúûûúùø÷õõóóôù
ýûúûýýýüûúø÷öóóõøûþ ÿýýýýÿ ÿþüø÷ùúùö÷÷øöõõö÷øùúýÿ
ÿýûùõîèãâäæêîò÷ þýüûùö÷ý þýÿ ü÷ö÷ø÷õõøúúø÷÷øùøøöõøý
þýýúøöõõõøúüüÿ ÿûþ ý ùú üöõ÷öôõ÷öõùÿ
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ýóø ûù üü þöú ÿ õòûúù ýôû ôö
ÿíú þîòü þý ÿõôþ ýú ôïõÿüúý ÿ
ÿýÿ ÿÿ ýúùý ýùøûúúþ ûòù øôý øÿ ùðü ÿöøýýþ ý üõ õèú ôåù øèø
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öø ëó öçô ÷äì öì õ÷ èï óõ þõøúý ùêñ üòý úèó ùûýüÿ ýþ ÿñò ûðø þû
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õíõÿ ü úôö ùëö üçù õú ëì ðÞê ïì õìó úèù ýð÷ ý÷ý ýùþ þ÷÷ ðü
íú"− Úéø ÜÙ Úå − ×í##íÒÝöîßû âè èä òéôöôöøÿ ö‰,ýï!5#éî%5 âØ +öÔÒ%ôÐÛ ÷ÏØ íí×ú
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áÜý ôþ ÷ý þþ öñ (ùó " èðýôíú õìö üíñ ãÖ), ÷^. èââØÎÚ÷ þ ëäïÿ úù
÷ëø " îù ôù úë) èæ !ýÖä ðâ) èà "ÿÖß èç * çõ$0 Ùñ' çÒï åÒó" òà
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õü õäô úüýøû ùñû øú ýüÿ ýþ ü öðþ ý þöù ý÷öû þûÿÿ÷ô úúú ÷ò üçì
ïô òö ûçó ôáñ öù úô îõ ÷îôþ þëí /) ëïÿ òçð öðø ý øóõõðìñûþúùÿ
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%# þùòèàÞäïû üôîéäââãâååéðø ÿüú÷÷øü
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þýÿ ÿùøûýÿ õÝÎËÊËü ",,! þê×Øö +02" öêçêêäÛÙäù õéÝÔÏÑÙãéîóú ûòïðóøÿ
$#! ýùøûþ þôìæâååêïòôøþ ÿ÷ñíëìòü þùöõ÷û
ÿùóîëëïõúþ üù÷õóòôú çÒÎËÊ **2! !/− ëÕÒ)++3− ûèØÖãðìÞÙé
!$ ûäÖÑÍÊÊÑâõ öêãäíù %*(! þûùøû ôêäááåêòü û÷ö÷óððõý
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ñöù17'üâÚÜÛÖÖè øü ûÝÑÎÊÐáñ ýðëëìïìæãæð '//' ÿôîð÷
÷íèæéïø ýûüüùóêããêö ùôöü ûööú ÿû÷ôñðñõøþ ÿøóñóóøý
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üïêð ',*# ýõôú üöñïñóöü ùðíñöûÿ ûøùÿ þúúþ
ÿÿþûù÷öùþ þüøõôøý ùäÏÏÇÜ *−4!ñðëÞÚñ ,. ""45!ùÝØåò÷þ ,1, áÖÑáúüõñøþúîåèø ï×Ì×ò
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#$ õÝÓßü þôæØÓáü óçæëññóõøüüöîìö ûóóùÿ þöù ú÷ú
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'−2# ëçû üéâéû ÿóèÞ×Ùæþ ûéääíõü ùðñû ûúÿ ûùþ ÿù÷úú
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ýüýþ ÿûúý üúûýþýþ ýøøüÿþüûûüÿ ÿÿ ÿþýÿ ÿþýý þýþ
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ùêÜÑÌÈÊÉÏãø ñáÓÍÈÍÚëü (156663' þðæßÞãëõý ÿû÷óîçáÝÚÙÛâíû)153,$
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ùöüýýÿ÷òø ýüÿÿûú ûóíõþ
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üðö ú ÿ úôñéè %− õî÷ þñìóùøôõ÷÷òððù ÷õøùü ÿ ü ûùý ÿüÿ øö íð
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ý ÿ ÿö÷ÿÿÿ ôèö ø ýéí ö÷ ûôÿ÷ý ! ò
ý èí ÷ ð÷ ýñû ðó øø ÿîð þù ùý ÿù÷øþ þÿÿü ÿöÿ öíù ýø ôú ñó ý
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ñï % ïçõû÷ ùãõ ÷ùû÷ù ô íëüþöÿ þù þôû ñð ýþ ûþ úö ûíþ üýññýþ÷õû
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þöþ óù ÿùý ÿüúúüþüü þòñ ðó øîó ø úïú øý õ ÷ù

õí íî þëñ ü÷ûÿü÷öþ ýü ôðþ ýù úö üõõ ÷î÷ õòÿ ÿóö
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ïõ öý ÿñù ù õïÿ øøû ûø ñú ! æë ù óñ ù õòûüý üó ùóÿ úü üü üý û÷
ôðÿ üö ò ñö ðó ðï þçð ! æû% îÜ % ÜØØÿ ûÜå ñï ôìú ý÷þ ûô úîÿ úø þôø õ÷
üñ ùíù ÷÷ öö úùý ÷çô % òñ ó ÷ø ÿýþÿþ òå òóó ÿí÷ õöþüôù úö
ÿññý ýö õéü þò÷ü÷ù ïð ûôû øô õú ùú ÿùü úþ ùôü ÿú ñô èñ
ýó þìì÷ ïè ñø ïï ëéÿ þëð îìÿ ÿ÷ ôð öý ýú ýíñ ùôöûÿ óñÿ ÷ôý ÷÷ öö ÷
ùø öó ÿõú üõù üûüüú ûøùúý ðõ ÿñÿ óö úô ùìö ÿþ õô õîý ÿîíÿ ñô
ùòô ÷ð öú ùóû ýóý ìø ùäö ÷éþ ìëý ûôý ö÷ ïî êñ èô èî ìð þôý
öð öíû ùõ ñ÷ óðÿ ûñö ÿ öî ïéÿ øóú ÷ö úõùÿ ûóö ÷ïþ öö ú óèø ïõ
ýëú ÷áô ùãð üèò øò õ òéþ öíø ôú óè ñëü þþöõ ýéô ìó ùòý
úúõü ùøþóõ ÷öþ ÿýýý ôð öæù ìáø ÷ïÿ ùþ óêö úïó öú þò÷ ÿú
òèÿ øé÷ öïû õï÷ûõòþ øðóý øíò ûêô èí ! ôäí úý úô öèô ÷ï íó þóü ÷èó
õî÷ øîô úïú ûñõüýûüþÿ ýùý þøü ýûüûüüÿ ñìù ùñï÷
ûòïü ù÷ýþüÿ öñ÷ þúõ÷ ÿþ óó ýëéø ÿòòÿ óñþ ûîî
üòý ìãð û÷ ùû òéô ! øåð ûïù ÷êò ùõöøûüý û÷øþ ÿûü
þûüÿÿûùû þý þùü ÿþ þü ÿÿýúüþÿ þþþýøõ÷ý þþ ùõöùùüüÿ ÿþþûøù ÿÿ ÿþþÿýüÿ
ÿ÷öû ÿ ÿûùý ýû øöü ýøù øöú ýûÿ ùõöþ þüý ùïäàç÷ þ÷ðî÷
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ûóîëìô $ ÿ ÿ ùîéëñ÷÷þ üóííðöûþ ÿþüûüÿ üúúüÿ
ÿûøøúý ÿþÿ üúùúüüûúüþÿÿúöôøûþ þüûüÿ
ÿýýýýÿþüúøöõ÷øûýþýüüüýýþþÿÿ ÿÿÿ ÿÿÿÿÿÿ üø÷øü þûúü þýÿ þûûüÿ þûúûýÿÿýüûúú
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þú÷÷ùþ þúööøûÿ þúõïìíðõûÿÿþýýþÿ þþÿ
ýùöôõöùûüþþýúøøùüÿ ÿÿÿ ÿÿ ÿÿþýþÿÿÿüùøøûÿ þýþþ ÿÿ þüùõñìåÛÓÎÓæ !−04,
ýùùÿ %)*% ùéÝØØÛâîùüôïïò÷úùõðëæâÞÞáèòþ üööù
þ÷ôô÷ý ýúùúûýþüøôïëééìðôúÿ ÿ
ýúùúüþÿÿþûøöõ÷øøùùúúûûúúúüþ ÿøóòõü ÿùóîìëìíëæØÌÊËÊá)−355#
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÷îêîú ûöñëäÜÖÔÔÐÊÊËÊü)*237 ãÚÓÑÉî%*0364$ ÿïãâèù ÿùóìòü
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ýõðð÷ $%! ìØÑÏô#*036(ýÞÕÑÌÌÞ %! úíãÛ××ÚÞßàãêõ # ïÝÓÕç *0. úêáãîü
ÿÿþüøóëãÜÖÖÞåäÓËÊÊÓ *−27 êÚ×ÏÖ (−247* üõóø ûôø òáÒÍËÊÌé
"+0/' ðâÞäñ ñâÙ×Úâêñ÷ùùõõóúüüøóïîñ÷þ øíãáé!.255# úîêîù ûóéáÝÚÚÝäîû
÷ìäàãëù !" öìéîû ÿ þðÝÏÌÊÔãÞÐÉñ$,/8 äÚÖÎó"+14664 êÙÙí
éÕÑÌÌÏÞââî ÿÝÑÏÊÔð û÷ý ýîáÚØÝëù øòïðîçÝØÝë÷ýþ úõô÷ü üü
öïïñõ÷öòïìéèêïôõòííóøûúû þü ÿ
ýûûûúõëÝÑËÒáìÝÍÆä"+.8 ÜÛÐä −549 áØØ − ó ' ñæâÝÒÌÐÞîîþ þãÐÎÊÐéøøû ! úçåñþ
*36. þÿ #$" üóòöùø÷ú ûìßÛÞäéï÷ ýõìéééíõý öëåí /33
ýúüüý÷ëâáéôûýúõïèáÝßçõ þúúÿ üúû #'
òëëñú úòêäàÛØÍÊÊÍ ,+5−ñÙÙÏÕý!,139"äÜÒë$* Ð5" åÖÖÝÝÖØññ *(ãÕÑÍËßü !(ìØÒÓê
*22óâßí ! ôèßÜãìöü ÿöëßÖÔÝëü ÷ìåçñ øòÿ // ðèæçëðõúüúõïìð÷üüøôôü

üøõ÷þ þøùÿ ÿþÿÿýüüú÷ôòóöøóäÏÌÈÒ ,+8 ßØÔÍá)/27*ìÙÖÔ ,−'
' ìØÒØòÿýýû ! ìÕÒÌÍð "# óÙÒÍÍò +
ýöðîò %+)$ ûòó .3, óèâåò ÷êâßáçïøÿ üõíèäãæïû òæãæîþ #*# þü #
üöòïîòù ûóìêíõþ ÿ÷òóù
þûü þøëÖÌÌÈ +(5"æ×ÕÌÕ),16,î×ØË+*3* óÙÔÌÞÞ (,
ûóàÐÌÌè $% ôáÒÎÊ× #,* ñÚÒÒßñ ') ùëéòÿ !# óïõ ûíæé÷ ûðéæèñþ
ÿ÷óññïìíóû ÿòëñ !!! ýòîù % ÷óòöý ûôñòöúþ ÿøòïïñôøþ þõíêîöÿ ÿüúûþ
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)+. úéâÜÙÝí ôêèéèæëû ðàÚàìø íãç÷ ûòòú þúúÿ üöóòõû
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ÿñÞÐÓÎ */ *//+ îÛÚï %*! ÷ìéìõ üõòó÷ûþ úóðòõõûÿ
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üøøý ÿüûý ÿúøúý ýúøøû üùøùûüþÿÿÿþýüüÿ ÿú÷øû þýüüûúúüÿ ýüüþ
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ÿýûûûüýýýüûúøùûüüþ ýüýþ þûü ÿþÿÿ þýþ ÿ þþ þýýýþþþÿÿþüûûûüüýþÿþþÿÿþÿÿÿ ÿýýþ ÿüûüÿ
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ÿþýþ ýüüý ýúøøúý þÿüúý
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ûú ýýÿ ýùöóòôøýüúøøøúüþþüúúúÿ
þýýþ þûûøøùûþÿýüüýþÿÿþýÿ
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ÿýþÿ ÿþýþ þûùøùûüþþÿþÿ þüúùùûþ ÿÿþÿ þýÿ
þþÿÿýûûüþÿÿÿ ÿýûûúûþÿüúùúüþÿÿþýýÿ ÿþüûúùùûþþýýûøóíéèëôÿ üû
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ÿþýüûúúúüý ÿþþýþþüüüüüûúùùùùùùûý ÿÿÿÿþ
öçãâÖËÊÊÈàÿ ++/35' úõòõÿ %***,−' óßÒÍÊÉÍãù øëÞÖÓ×àìû +11,% ýñéèîöÿ
ùñéàÖÍÌÐÚçôÿ ýúùøû ùïïçäèòý $'% óèáÛØÛãîú ûôðîñ÷þ $'%
ûóìêëðõúýýýýýû÷óñïðñòóõùþ ÿÿ ùãÑÌËÊí */356563 è×ÑÍÉÑë ÿîØÎÌÊËÉÕö +/3560'
øéâæô !*/," ùìÜÐÌÊÊÉÙö ü÷õòòôý "0352 üîáØÎÊÎÜð #−1556. ôääÛØÚÝçõ
ùîãÙÔÖßíþ $,.(üôîëíòú üöðêçèìñ÷ü ÿüûúøðÙÎËÍÇæ$*/456563 ðÚÔÐËËÉã)−$
öÜÒÏËËÊÞ ((−2556+ ûè×ÐÏã !,04+ úåÕÐÌÊÊÊÌê).33$

÷ñìì ðø ùíãÝÞèù $/2555* îÙÑÍËÒßíù ÿ÷îçäçò #'(& þóêåãåìôû þúöòíêëïõû
îÖÑÎÊÓ +,346556!óÚÕÐÌËÊÏ(,24655% ùãÕÐÌÊÝ $,01' ùäÔÐÌÊËÉÒú +/350! øìâßæö −21$
öîçäæêìîñöü
ü÷ðëèçêêîòô÷ûÿ þúöõøþ ÿäÑÌÍÆã#)/355556#÷ÛÕÐÌÊËÊæ '−−# ùÞÔÐÌÊÍó */35554!
ôàÓÏÊÏç ,0353*! üíàÛàï !$" ÷èØÏËÉÉÒé (/353.% ÷éÞ××Ýèõ üñæÝÙÛãîû
÷ïëëð÷ÿ ûóëäâãéòý ÿäÓÐËËÉÉ *)2355552
âÖÒÍÊÊÉÑ $*033/# ðØÓÏËÊËí).24545&ôÝÒÎÊÉ×ñ "+/−
òÚÒÎÊÊÈÔð ÿîÞÑÍÉÌÜñ (0351 $**$ þîá×Ô×ßê÷ "$
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øáÓÏÊÏÝêô ïÜÐÍÊÊÍÚì)03555) ûðèäâãçî÷ ûôïííðôú ùñëçääçíõÿ
ûööóïîðõû ÿüùöôñïïñõùüÿ þýýþýòÙÎËÌÇé#*/3555564 íØÓÎËÊÊÌäú
)152 óÚÕÎÌÉÓì ,045656, êØÐÍÊÏØáîîÿ " ñâÖÏËËÑÛêû ".25571! öèàÙÔÕÚâëôü
ýûûûúúúüþ þüúúúûý ÿþüüüýýüûúùøøøøùùúúý
þñÚÏÌËËÎ *+2466657, âÖÒÍËÊÊÊÛïý /256663 îÚÒÍÊÊÊÌÛñ))! öéßÕÌÌÏÖáò
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%.256"÷ÛÕÑÍËË×êý ,045666* ÷áÔÏÌÊÊÊÌÞø (/− ôêàØÒÍÎÓàõ)/3667. öåÕÏÌÊÊ×ìý
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üôïëêëïõü öÜÒÏËÌË ++34656661 ßÖÒÍËÊËÊÊÔéü +/354 îÙÕÏÌÊÌÏäø çÖÑÍËÊÊÉÒê
,1/ öæÛÔÎÊÌÐÙé #.15573" ÷êÛÐÍÊÊÍáú %# öìååë÷ ýôëæäèðû
øøïêèìóú øñëèéíôý üí×ÐÌÌÉÔ +−4465657+ùÚÖÐÍÊÊÊÏæú .246−
å×ÔÎÌÉØü +04656570 óÚÓÏËÊËÖáìý
−2++ ÿäÕÑÍÊÌÙçô ,14656− ÿîâÚÕÒÏÐÔÝì "& ûñííïïîíù %,,$ ùóðíêçæèîø ýúöòìèæéñþ
ÿùòëçåæìö úôðíëèØÌÊÍÆä$*04666657"ñÙÕÐÌËÊÑì %((! ÷ÛÕÏÍÊ×
)−2465656+ ùßÓÐËÌÞó üéÕÎËËÊÙõ *156665* ðáÙÙÙÞçïõøùúþ øëßÖÖàïÿ
$'& ôçàßáçñù üóìëíòùþ üõñïðòô÷øûþ
ÿû÷÷ùü ýåÑÍÍÆð()136655665 ñÙÔÏËËÉÙö
÷ÝÒÎÌÉÔ (,2465561ïèàÖËÊÊÊÒè)0451*" þõíéêðú úôïìêèäàáäïþ ((*& ùóîìîö
úõòððñòöü þú÷ôóñðñóöùý ÿ üæÒÎËÊÏ ++3465656' åÕÒÌËÉÏõ)//,
ýõïäÔÌËÉËÈá)−3564' þðáÕÔáú (.. øæ×ÏËÊÊÊÊÏÜñ $.150" ûøøùûÿ ! øéÜÔÒÓØßèòþ
!! ÿöïíîòöú øñíîíóù þ÷ðìééïïôùÿ ÿþýüüýÿ
ÿûøöòêÖÌÉÌÆã")/3555560 óàÓÎËÊà ",+ ôêåâÚÎÊÊÊÉÐï **.262
ÿúû !,.$ ìÛÐÌÉËÑÕÚßçô #*)! ý÷öùÿ ! ÿñäÞßäéîñôú øïéçéîôû
üø÷úûüý
ýù÷ôðïòõ÷øùüÿýüý ÿüüýüýÿ ñÚÏÌÊÎþ%+1455564' òÜÑÍÌâ öäÔÍÊÉÉÊÞû !#!
#)−+" ýõòóó÷þ þôéÝÔÎÏÖàì÷ ýõïêéíôý
úôñðòõøý þû÷óîëééêíòø þüûûüþ þùóîêçææèëïóøý
ÿýýþÿÿýóâÑËÏåþ −43.,,) ûìçéîðïííñú ÿóèàßâææáÞàçòþ ÿúùúüÿ
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ÿüúùúúúûúúûý ÿþÿÿþýûù÷ööõöõõõö÷úüþ
ÿÿ ÿþüúúùùúùùúúûúúûýþÿ
ÿþüù÷öõõö÷ùûýþþþÿÿÿÿþüüüýÿÿÿþýýþþþþþÿÿþýþþþÿ ÿüøôòòóóóôõøûÿ
þùùøøúüýþýýýýþþþÿÿþüúúúùùøø÷÷÷ùúúûýÿ
ÿÿÿÿþÿþþýýüýýþÿ ÿþþþýüúø÷÷øøùúûýþÿ
ÿÿÿÿþýýüüýþ ÿüûûúúûüüýþÿ ÿÿþþÿÿþþýüüûùõòðððòóóô÷ûÿ
ÿýüúùøøúûûûûüþÿÿÿÿþüúøöôóóóóóòòóõ÷úûýþÿ
ÿÿþýþÿ þüûúùúùøøùúûýÿ

þýýûúúúúúûüüýýýýþ þýýüüüüüüüýþÿ ÿþýþþÿÿÿ ÿü÷òïííïðññóöúÿ
ýûúùøùùúûüÿ þüú÷ôòïïëëííðñóô÷÷ü ÿýüýþÿ
ýûøöõôôõ÷øúýþ ÿýüüüûúúûüþ
þú÷õóòòñòòôöùü ÿýüûúø÷öö÷øúýþ þýüûù÷öö÷øùûúúùø÷õóðïðñõøúü
þûø÷øùúúûüÿ ýúöòíêèçææççéìðôøü ÿþÿ
ü÷ôðíììíïòõúüÿ þüúø÷÷÷ùúüÿ
þýüýýûùööôöö÷÷õóóóòòôöøúüýþÿ ÿÿþýýþþþýýüûúùøùøøöôñïîîíííìñôú !$ ÿýüüþ þûû÷óíêçäãâãäçëïô
ü÷ôñððððñòóöøúûúúùøöõóñððñòõ÷ûÿ úöö÷ûýþ
þ÷ñíêèåâåâêðõúÿ ÿýûúùøøúþ ü÷óñïñóöøüÿ ýù÷õñïïîìëìîóöúýÿ !"
þúöóðîìêçäáßÞÞáåèìïòôõ÷ûþ
ÿþüûúøöõôôóóóôóñîíííîòôöùüþ ýøôòñïîììëíðôùýÿ
ýúø÷õôõö÷øøøøø÷øøøøø÷øøøøøúýý÷òïïðòóóôöù $,0.*$
ü÷õõùþ ûõïëèäàÜÙØØÝæðù $%#
ÿúõòññô÷úþÿþûùõñîìëèæåæêîôü
ÿýûûüþÿ ýùôñññóòðïðôøü
þüûøöõõöøúüüüûúøöõ÷ùûûùøøûÿ üôíèåàÙÓÛòò '/35453,
ûóëçéñ þøïã×ÏÌÍÏÒØäô ÿýüùõóôú %.2/ ÿû÷óñó÷ûþ ÷íäáàáâãæëñù
ÿýÿ ÿùõöøüÿ ýøôñîëêëîôùüÿ þþÿ
ýùøüüþýýüúúúúùù÷öõóòòóõùý üøö÷û ÷íãÚÐËÖð (.34232−" úïéçë÷
ûõìâÖÎÌÍÑ×ãñ ûõòòôõöû '.2/'
÷ôôôöøûþ ÿüöîåÜÕÔÚãëòøþ ÿüùøúÿ ýöòòôú
üöòîëêíóú ÿþüùø÷ùü þöðìêêëîñõúþÿ üùøùúúúúûüþ
òÚÏÌËÌ)*24655− úéØÎÏã õ #.) ûæØÔØãñ '+,−00,! þìááëù þôîéãÜÔÐÓÝíÿ
øïèçëòùÿ %)$ ÷ìèéî÷ ýóêååèî÷ ÿ÷òðñôõôôøÿ
ýúûÿ ÿúõðìîîðóùÿ ÿýþþýüüýþþþ üäÑÏÊÒ)+2465,
øìâÝãû ,0* ýêÜÑÌÉÎÎÞëïïóü óÝÑÍÐãø ,1,! ýñèåëú $% ûìáÞàâåéíòü
÷íæäæíù ôëæêö # ûõïèåæêñøÿ ûøøùûý
üùø÷öõôôöúþ þùõóõùýÿÿÿÿ ýóèÞÚÜäñ " ÿüûü
þõìææíõúýýÿ ýöïëëïõÿ þüý üóìéíôû þûúûüúõñíîõý
ÿþýþÿ ýùö÷úÿ ÿþýýýýþþ þüúùøøùûüþÿ ÿÿÿÿÿÿÿ ÿþýýýüûûüýþÿÿ ÿüûüÿ
ûöóòò÷ûÿ
üù÷÷ùÿ ÿþüùöõöúýÿÿÿýûúúùûüþÿÿÿýüúýÿ þüúøúúü ÿþÿ ÿÿÿÿýýÿ þþÿ þýüýÿ ÿþþýýü þüûú
ýý ÿýý þýýüûúùûþ ÿýûúúúúûþ ÿþþÿÿÿÿ þýýýýÿþýýÿ ÿûùøøùúü
ýúùùøøúýÿ
þüûûüþÿ ÿüûüýÿÿ ÿÿýýüûûüýÿ ÿÿÿÿÿÿ ÿþþþÿÿÿÿ ÿÿþýýüýþÿÿÿÿÿÿÿ ÿÿÿÿ ÿÿÿÿþ
øóö úöòò÷ÿ ÿ üùúýüöôú ÿÿ üúû û÷õøý üü ú÷÷úý
ÿüý üù÷öøüþþ öèåð ùññù
öòõû þýüûý ÿúøùûûü ÿþþ þþ þüý ýúþ ÷ìðð øó÷ûûûþ þýýüü ÿ ýþ ýûûýÿþüüýýûùûþ ýúü
úü ýúþ õéí ÿþøñðú ûúùøú üø÷û þþúúþ
ÿþ ÿ þýÿ ÿþýþÿÿÿÿÿÿ ÿþýÿ ýûûüþÿþûùý ûö÷ûÿýþÿÿÿûøøû üúûÿ ÿÿ ÿþýÿ ýúúûûüþ ýûýþüüþÿÿ
þøöøý ÿþþþ ÿ ÿýûûÿ ÿüýþ ÿ þýþ ÿÿÿ ÿüüüþþüúüÿ þýýþ ýýýÿ ýýýþýýþýýþýýþýýýýýýûüýþÿ ýü
ùóõý
ûø÷úÿ ý÷óóõøúýþýûûûüýþþýúúûýÿ þýÿ ÿþüüý ýýýýþþþýýýýýýýþýüüýþýýýýýýýÿ ÿþýþ ÿÿ ÿþþþýüý
ÿ ýýþýýþüüþýüüý ÿþÿ ýýüþ þþýýýýþþþýþÿ ÿþþýýýþýýþýýýþþýýýýýýýûù÷÷ùüÿ ýýÿ þüúúü
ýýûûýþþýþýüüýýüüüýüûúûýþýýýýýýýýþýüýýþýýýýýþýýýýýýýý

ÿýþ þüûüþÿ þüúûþ ýûü ÿúøúþþüø÷øûÿ üûûûüÿ ýùøúýÿÿþþÿýøõ÷ü ÿ
ÿ ÿÿ ÿþÿ þþ ÿ ÿþ ÿ ýøøûÿ ù÷ý ùñõÿ þú÷õöþ ü÷÷ûÿ
úöù ÿýý ÿ ÿùöú þ÷öûÿý÷òïû /+ åÕÖÖäø ïæí óíñû ü÷õù
üøúýþ ÿüúþ ýúÿýÿ øöøûÿ
úøúüüþ ÿûø÷ùü ýúúý ûúþ ÿûúý ÿüùøúþ ûõõû ü÷÷ö÷ ÷éí þòðý
þöõöû üöøþ üõõù üõõøý ýõóø ýù÷öùý üùúþþþ þ÷õöü ÿýýýúû ÿôö
ÿüÿ ÿúøüÿ ÿù÷ý ÿ üü üúý
ÿ þ ÿ ÿûüÿþýþ ÿøöùùÿ ÿüùöùÿ þùùûüûûý ÿûûÿ ÿýý ÿüûüþ ýýÿ ýüÿ
ýüþ üùøúÿ ÿýûý ÿþüüûúûÿ ÿýüüûü ýûü ÿýúúûþþþüüýþ ýüüûüþÿ þüüþþþÿ ÿýýþÿÿ ýüüþ þýýÿÿþýü
üøõó÷
ÿýûûûüüüüûûûúúúúúûüýýþþýýüûûüýýüüüýþÿ ÿÿÿþþþþÿ ÿþþÿþþýýþþÿÿÿþýýýüýýüýýþþ
þýþ ÿ
üúùúý ýûøøùûýþýûøõòóõùþ ÿüûüþ ýûûüþ þüûüþ þýýÿ ÿþýþ ÿþýÿ ÿüûûüÿ ÿýüüýÿÿþýþÿþýý
ÿÿ ýüþ
þ÷öú ýûù÷÷÷øûþÿýùõòóöü ÿýýþ ýûúûþ þüûüþ þüüùøùý ÿÿ þüûüýþÿþýýýþÿÿþüûüüþÿÿÿþýýüüýÿ
þýþ þüüüý ýûøööùûüûù÷öõöøúý ýýüûüüýÿÿÿþýþþÿÿÿÿþýüüûúúúúûûúûûûûúúû
þûúûþ ÿþþÿÿýüüýþÿ þüûûüþ þüûúúûýþ ÿÿÿ ÿûùþ ùôñðóü
ûôïíðø ýôðòø þú÷ôóõú ýúúý ýúøú ÿýüý þùööùüÿ
ùôóöú üòíñý ùðìðû øñðö üóïñû ù÷øû þüüûûýÿÿüúúüýüùøúûù÷÷úú ÿûúúùøû
ÿÿ üþ ûý ûùùý þòëìø ùôöúýÿ øõü ýóñø þòíô ûòîñþ
õèçõ üóííó øëåèñùûûþ ùîïü ýôòù üõõû
÷õú ÿÿ ÿøññöúýýÿþùõôöøúþ üöôöùûýÿ ýüþ ù÷û
þú÷öú ûø÷÷÷÷úþ ùòòú þù÷úýþþ þþþþ
ùõû ý÷÷ý üûüþÿ úöù û÷ùúòãÛå (÷ëæçîû ' úëåíÿ ÿù÷ùý
ÿþúöôøÿ úñëéëñú þóéäæðü üôïðö üúúý
þ þýüûýÿÿþüúøøúýþûúùùûþ ÿÿ þ
ÿ ÿüúúýþýûüûúúûþ þöëàÙÞî % ýëßÜèÿ øíëô üùúþ
üõññöý ÿ÷ïèåèðü üòêçëóý ýøö÷úÿ
üõôú ýöïíòúÿ ÿûùùùùøùúýÿÿüûûûüýüûüÿ ÿüúúûý úöøÿ
ÿýüýý úúøøùûüþ þýùðãÛßï " ûíäääð *) ýòð÷ þÿ øïïîöÿ
÷ëãáæóþ ûòëéìôý þýþ ÿ ú÷ÿ
ýÿ üúúùøùùü øïìóý ú÷õôõøþ þúúý ýÿ ýûúü üøøý
úö÷û ÿú÷öúþ ÿûøøû úñåÛÜë (% ðçæï !" ùú ýøöû
ýóéäçñü ÿ÷ñëêíôûþýûúûýÿþôèáí $ ÷óù úôø ýôïó ÷ìëóü
ýôïð÷ÿ ÿú÷÷ûþýûùúû ÿüüþ ýýÿ ÿûûþ ûùþ þõôù üû ûúü ÿþþþþúóêãåô
" ÷ñóõ÷ù úú þûþ üøøý
ýùøõôöôûÿÿüúúùøöõôõøûÿ ü÷öøþ ÿýý ÿýüûúúúûÿ ýúùûýÿ ÿû÷øúþþþþ ûúûþ ýöôöý þúúü
ú÷÷øúýÿ þÿ ÿ
ÿûûÿ ÿÿþûúûüÿýüüýüù÷øúýÿþýüþÿ ÿþýþ ýüýÿÿþ üúûÿ ÿþ þüüýÿÿÿÿÿÿÿÿþüüý ýýþ ýùùþ ÿ ýý ýüÿ
ÿùý òïû úöý ø÷ý øïéêó úóôùúùü þõø þöø úóõ
ÿûüþýúööû þûúýû÷öøþ ÿûùùû ÿÿ þýýüûúý ÿÿ ÿ ÿþüüüýþÿÿÿþýüüýýÿÿÿþÿÿþýþ þüý ÿýûüýþÿÿÿ ÿ
ôçæëòù %" ÷ù þ ýõðñû ýóíëíñ÷ü ýùõóòññòóöü úøøûþ
üúùúý ÿøòðò÷üÿ ÿüûüþÿþÿ ÿÿ
þþÿ ÿþþýüüýþÿþþþþýüúùùûý ÿýúúü þýýþÿÿÿÿÿÿÿÿ úñàÏËÍÿ()3)úÚÕÏÏÝõ '.30
ç×â þüúôëéô üèØÐÓáô óæßßèôÿ ûôôû üöøþ úôñóù
ýôíëíôý ÿøïéëëòûÿýþ ÿþÿ ûû
üùøûýÿÿÿÿÿþýýüùø÷ùý ÿüøõõ÷ý ýûûüÿ
ÿüôæÓÍÇå *.22 á×ÒÎß $−05 æÙÒÝ %%"$! üèáëÿ þøý ûíáÛÜãð ößÑÎÜ÷
þòéæíü üùü û÷øþ ÿùòÎîôü üõõïêëðø ûööùÿ ÿ
ÿüùùûÿ þûùøùûþÿýûøøúüÿ ÿýýÿ ÿúøùûþþ ÿýýûûöìáÚÝñ).#
ñß×Ýî "−2* ìØÖè ,.(êÛÜï ÿõëæèñü ÿû÷÷øøõòñóõöúÿ þöññ÷ ùóòú ú÷ù

þûûý ÿýýýýþþ þüûùøøúÿ üùøøúÿ
þüûýÿ ÿ ÿüüüýýþþþþþþþÿÿÿýûüý ÿýýýþ þýþÿ þüüüþ þýþþÿ üûýþýüùøùý
ÿùööøü ýõòõõü ýöõú
þøôõû üø÷ùü ÿýüüýýÿ ÿþþÿ ÿÿÿ þþþ ÿýþ ÿýûûüý þýýýþÿ ÿýþþþýþ ÿýüþ üùùûÿ þûúü ýüûüÿ
ûø÷úÿ üø÷ùþ ýúùùü ýúùûþ þýþ ÿ ÿ ÿÿÿÿÿ ÿ ÿ ÿþþþ þýÿ þþþ ÿÿ ýùúÿ ÿþýýüýý
ûùú þ÷ôø úôôùÿ
þø÷øûýþ ÿû÷÷øûýÿÿþýþþýüûý þ û÷÷úÿ þùööùÿ þúùúÿ
ýùøü ûøøûþ ÿýüûüüúùû ÿûøùüþ ùóóøþ û÷õòñø ýóñôøü üõñîêêíø
ùðêïþ $ ÿôôðóü øñóù
ûöóòôú þúùûþþýýÿþþ ýýûùúý ÿúøùûý þùøûþÿþüûùùúüûùúüúùùùý ÿþ
øóööÿ þöòðñõû ÿýûûüþÿ ýüüþ ÿú÷ö÷úþ þüûüÿ ÿ ýôëçäåò
" üééò *ôòú öñîíïòöøøøùúùõòïïóù ÿüüþ ÿüúúûÿ ÿÿþûøõóôû ÿûøúüüþ ÿ
ÿûúÿ üü üóú þú÷û ÷ïòùûùúûúøøúÿ ýûüþýùõñðóøûú÷ôôôõ÷ü ÿþ
ÿûúÿ ÿøóôú úçÙÓÒ×åü +/&øîîñü !/42% öôöû ýóæÝÙÛäïû ûóîï÷ ûü
÷îçæíù þ÷òïîîóý ýÿ ÿ ÿÿÿýýþýüüýü÷óôô÷øùûùõóùüùý õô
ú÷õóöþ ÿüùõòñóöü ÿüøùýþüø÷ùþ ÿûûþ øõùÿ
þýþÿ ûïâØÔ×âö)/(ôóú !)+$ úîëîõúüýþýøìàØØàìø ÿúøú ûùûþ
÷íçåéíóû ûõòõúþÿ þýþ þùùûþÿÿ ÿüúùùùúüýþþÿþûùøùûý ýøøý
ýôðò÷ý ýøóññöûÿ ÿ üùøúþ ûöòñòôöùü ýùöù ÿûû
ýù÷õñëéîõýþøîàÛë (.− %# úôôöõñîîñôóïéææéíñø
ÿþÿÿü÷ñììïó÷ûýû÷óóõú ÿ þúùüþÿþûøøùûûü û÷õ÷ý øôú
úñëðøýþ úôðíïù þýÿ ýûùûþ ú÷õóòó÷ü ýûü
ýù÷÷øùøõóôôöøù÷ïäÜã !−/! ÿúþ $% ôîîóõõõùþÿúïäßãëõþ üüöõú
ÿýþþýýýýúòïëðøþ ÿúõôõøûÿ ÿûü þúúúûý ùïéï !"
õïïø # üóëäåïü ü÷õöþ ÿýüúý üøõòðñ÷ýÿþúøøúúûþ ùøü
ÿþþÿÿ ÿùøý þøõñìæçù)) ôñö !" ûóñõûþüüúôêãäêóþ þ÷óöþ
ÿþüùõóõúÿ ýùõñïòøýÿ ÿþüüüþ ÿ þþýþ ÿýþþþþÿþûùø÷óìñ
ÿïëõ $ üöôú ÿùôòðîñùÿ þùõõù þþ úõöùûýÿ ÷õú þüý ÿþýüý
øðð÷ üòêâãö (ûøú ýüûùõîêíõýÿþýû÷õ÷ü
üùøûýþþýûùø÷ö÷ùûûüýûùùùøúþ þ ÿþ ÿ þüÿÿüüúóëíù ÷ñ÷
üü üùùùûýüùõõöøü þûúü
ýþ þüýþúøúý ÿýÿ ÿüûü ûøü ýýýüýþþýýÿÿþÿüúôíùù ÿñî÷
ü÷öû ùõöúüûøõ÷øøùûÿþûù÷øúþ üøû ÿþþ ýûûüþ ûõóõúÿ þýûúûþ ÿÿ þûøöòñõü ú÷ùÿ
þýüü þúøõôøýýÿþþ ÿýûûüýþþúøùý
ýý þÿ ÿ úøùúüüüýýýýýûúõïíõ øøý þ
ÿ÷òòøþÿüúöóóñóùÿ þüúø÷øúüýýÿ þýþþÿ þûúûýýÿþýûüüüûûüýüüüýþþþÿþþ ýúûÿ þüüûúûý

þùõô÷üÿÿþüüûúùùûüüýüúùùùûþ ÿÿÿþÿ ÿÿÿýüüüüûûüýýüüüüüüýþÿ ÿýüýýÿþþÿ ÿþýþÿÿÿþþ
ûõôøþ ÿýýþþûü ÿý þüüÿ ÿÿ ÿÿÿÿÿþüúüüýýüüÿ þúúþ ûúþ
ùõ÷þ ýóðø ýõôù ù÷ü ü÷÷ý üþ ÿüþ ÿ þý ÿùõøÿ ùöü ýóòþ
÷ñö ÿþ üúÿ ûùý û÷û ý÷ú ÷óøøÿ úûÿþýþ úøûÿ ýùùý ÷òø ùôù
ùøþ þïëõ ôîô ýõõü þö÷ òí÷ ù÷þ ýùùý ûöù üô÷ ùïîù üëêû ýïïÿ óòÿ
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Download sound file

Andrew Wensley works at Eidos Interactive, the company who publish the mega−successful computer game Tomb Raider III: Adventures of Lara Croft.

Andrew, 26, started at Eidos three years ago. He was initially employed as a game designer, quickly moving on to become lead game designer on the popular game Deathtrap Dungeon. Now he works as a game producer, spending a good proportion of each month in Norway liaising with a game design company that is producing a new opus for Eidos.

While always having been a great fan of computer games, Andrew's academic background is in maths. PASS Maths caught up with him at Eidos's Wimbledon offices.

Academic history

From first form to GCSE, Andrew attended Whitecross Comprehensive in the Forest of Dean. For his A Levels he moved to the Royal Forest of Dean College, a sixth−form college, where he took Maths, Physics and Economics (and a Performing Arts course on the side!). He then went on to Imperial College at the University of London, where he took a three−year B.Sc. in General Maths.

Andrew says that he didn't make much use of the Careers Service at his secondary schools. "From the age of 14, I knew I wanted to do a maths degree", he says. "I always enjoyed maths, and I believed that someone with a maths degree could go in a lot of different career directions. What employers want is analytical skills, the ability to think. In most cases, they don't care whether or not you can solve ordinary differential equations − they're looking for problem solving ability, the ability to do a thorough investigation. You get all of this from a maths degree".

Student life

Andrew had a busy time as a student. In his first year he was Hall Representative at his student residence and joined the Paintballing Club, of which he was Club Treasurer in his second year. He spent a year as the Maths Department Student Representative, and was involved in the Student Union all the way through his degree, culminating in taking a sabbatical year post−degree to be the Student Union President. "I think the purpose of University is to broaden your education, not just to train for a job", he says.

Of course, there was another activity that was important to Andrew as a student − playing computer games! He's been a dedicated gamer since he got his first computer (a ZX−80) at the age of eight, and says that, for him, "computers were always about playing games. Even at University! Once a game gets you, it's hard to get away." His addiction to games has been a mixed blessing. It didn't help his studies much: as he ruefully admits, "I might have got a better degree if I hadn't spent so much time playing games!". However, it has proved important in his job at Eidos: "to work in this industry, you need to understand games − you need to live, breathe and sweat games!"

Finding a career

Eidos's offices in Wimbledon

When Andrew finished his degree, he says he "didn't have a clue" what he wanted to do. He interviewed for jobs in traditional maths−related areas like accounting, but says that "they could tell I wasn't keen". Before starting at Eidos, he spent a year in "filler" jobs, including various data−entry placements and six months as a forklift driver.

During this period, he also took on some work as a part−time Maths tutor, working with A−Level students. "It was fun − problems, problems, problems. As far as Maths exams go, it's a case of spot the problem and pick the tool. You just need to have done enough example problems to be able to spot them."

Andrew says it would never have occurred to him to try to join the games industry, because he didn't have a Computer Science background − "I wasn't confident about programming. I'd only studied Fortran at University, and I didn't know C or C++". In fact, the idea to apply to Eidos came from a friend who was working in another games industry company. After much encouragement, Andrew sent his CV to a number of games companies, and within a few weeks had been interviewed and had two job offers, including Eidos!

Working life

The working day of a games development team changes with time, because games have a "development cycle". Andrew says that early on, there is a lot of brainstorming to come up with a detailed concept for the game. The ideas then need to be either fitted to existing technology or new technology needs to be developed, and a demonstration produced. If the company wishes to go ahead with the prototype game, actual production can then begin. "Production of the game will typically be an 18 month project involving 10−20 people and a lot of teamwork. The last phase is exhaustively testing the game to make sure everything is working as you intended".

Andrew hard at work designing a game level

A game designer isn't usually occupied with low−level games programming, so Andrew's lack of technical programming experience wasn't a problem: in fact, he describes game design as "a black art" rather than a science! "The designer is responsible for game−play decisions: how does that monster act? What's the overall concept of the game? For example, you might decide that a particular monster is too reactive, and ask a programmer to turn down its hearing by a third to change its behaviour".

Helping to figure out what's going wrong when a tester finds a bug is another important responsibility. "It's like being given a plate of spaghetti and being told one strand is wrong. Which one is it? You have to pull on all the ends to find out". Andrew says that "the crunch happens at testing. Errors are always there, and you have to find them and fix them. Maths problem−solving skills, including thoroughness and logical reasoning, are particularly useful here".

Work perks

Andrew thinks that working conditions in the software industry in general are pretty good. "There are benefits like company sponsored health schemes, gym membership, stock options and performance−related bonuses. It's also fairly easy to move around − to go to the US, for example".

He likes the informal atmosphere at Eidos − jeans and t−shirts are the developers' uniform! − and enjoys the fact that he's "working with interesting people". He also appreciates "seeing games before they're released, and making a game that you want to play". A particular concern in the software industry is hand and arm damage from long hours of computer use; another perk is that Eidos tackle this issue by providing on−site shiatsu hand and arm massage for employees!

The games industry is dominated by younger people, and Eidos is no exception. "Our game testers range from 16 to 27, and most of our developers are in their twenties", says Andrew. What about gender balance? "Overall, the company is about 50/50, but games development is still pretty male−dominated. This is changing though!" Lara Croft would approve.

Typical salary? Andrew says this depends very much on the company and the individual concerned. A "low starting salary" for somebody straight out of higher education might be 15,000 p/a, but this could be expected to rise "by 50% or 100% or more in two to three years".

Recreation

Still a keen games fan!

At times, Andrew's job can keep him pretty busy. During "quiet" periods he'll work from 10am until 6pm, but when things are hectic 14−hour days aren't uncommon. "When I have the time, I like to play rugby and badminton and go running. Also, I'm currently taking a course in shiatsu massage." Of course, he still lists one of his hobbies as "playing computer games!"

Future directions

So what are Andrew's career goals for the future? "Total World Domination by 2020 − every game player's dream!", he grins. Actually, there are many directions Andrew could choose to follow, especially in an industry that has to change as the underlying technology develops. "There's no traditional career structure in the games industry," he says. "At the moment I'm doing more management, so I might want to pursue that, or I might want to move back into game development. Sometimes people decide to start their own games company. I'm in a strong, fluid position − there's lots of ways I could go."

Word to the wise

So, what would Andrew say to somebody contemplating taking a Maths degree? "Do it!" he says with a big grin. "Enjoy! Find out the bits you like and don't like, and chase the bits you like. You never know where you'll end up!"

Plus is part of the family of activities in the Millennium Mathematics Project, which also includes the NRICH and MOTIVATE sites.